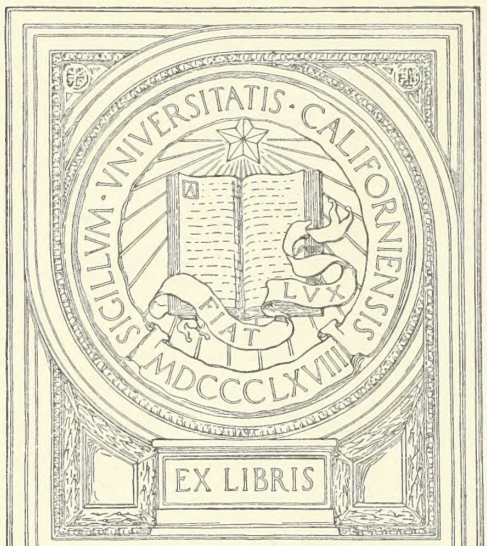
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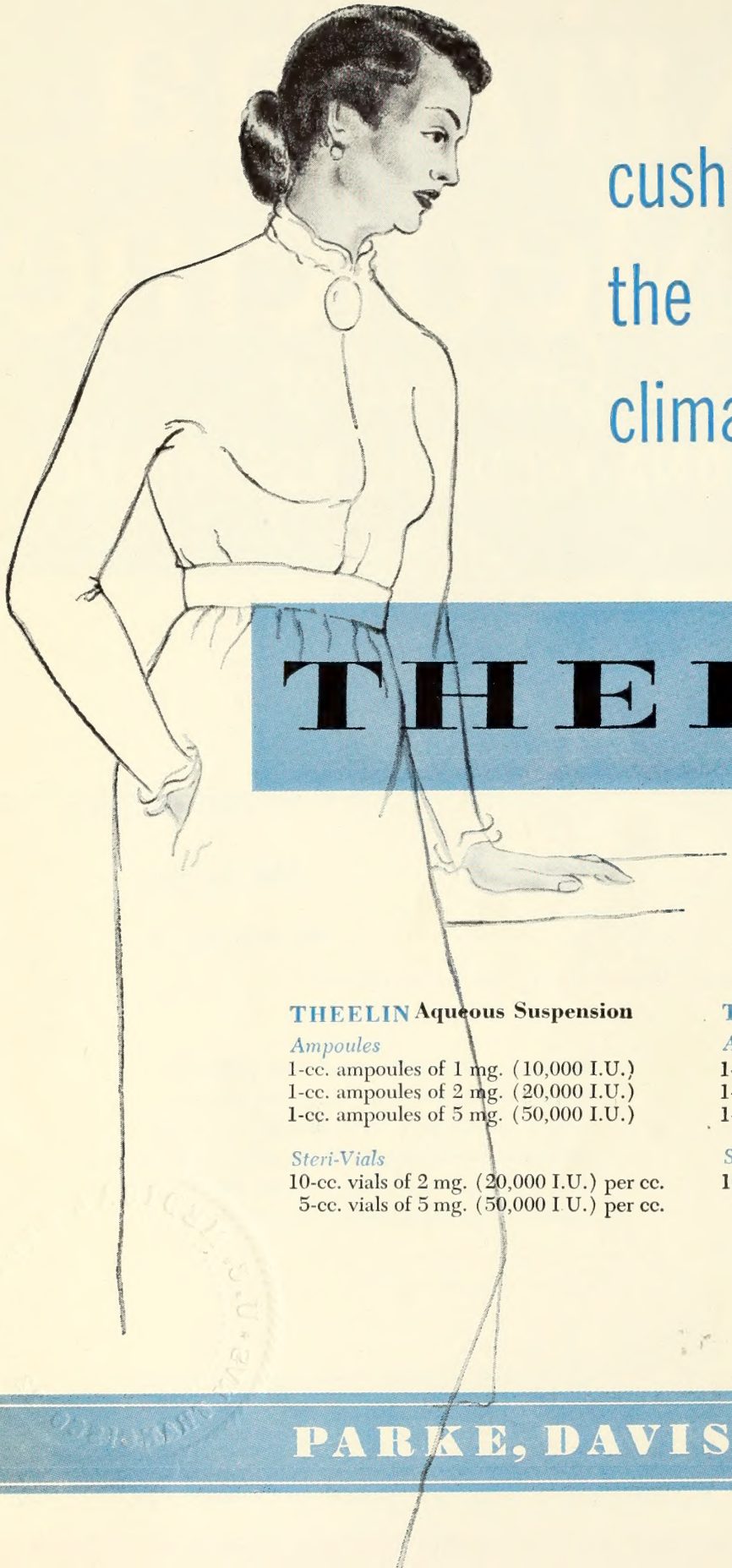


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# *Meat... Its Place in the Dietary Management of Nephritis*

The formerly held tenet that protein intake should be restricted for all patients with impaired renal function, in order to afford the kidney physiologic "rest," is no longer valid.[1] Except for infection and some neoplastic and traumatic disorders, the treatment of renal disease is nonspecific and essentially symptomatic. The clinical problem centers largely on diet regulation, in the hope of stimulating the kidneys to improve impaired function, without unduly risking harm.

Even in the presence of azotemia, a protein intake of 60 to 80 Gm. per day has not been found harmful to the renal patient. Low protein intake, on the other hand, together with urinary loss of protein may encourage the development of asthenia, anemia, hypoproteinemia, and edema.[2] Also pertinent to the dietary management in renal disease is the experimental finding that high protein diets in normal dogs promote higher urea clearance and greater renal blood flow than do low protein diets.[3,4]

Except in anuria, a protein intake adequate to maintain nitrogen balance has been suggested.[1] Although as little as 30 to 40 Gm. of protein per day may suffice for this purpose in the fever-free patient at bed rest, few occasions arise when 1 Gm. of protein per day per kilogram of body weight may not be given safely. In the presence of significant proteinuria, unless specifically contraindicated, the dietary protein may be increased beyond that amount in order to counterbalance the urinary protein loss.

Contrary to the still prevalent ancient belief among the laity, red meats are just as harmless to the renal patient as white meats; nor is there evidence that plant proteins are more beneficial in nephritis than animal proteins. As with the normal person, the dietary protein of the patient should be of high biologic value.

Meat, because of its high content of biologically complete protein, may contribute valuably to the protein needs of the nephritic patient. The nutritional importance of meat, however, is not limited to its contained protein. Meat also contributes highly significant amounts of iron and of the vitamin B complex, including niacin, pantothenic acid, pyridoxine, riboflavin, thiamine, and the newly discovered vitamin $B_{12}$. Other salient features of meat in the dietary of the patient are its high palatability, its stimulation of the digestive processes, its satiety value, and its easy and practically complete digestibility.

---

1. Mann, G. V., and Stare, F. J.: Nutritional Needs in Illness and Disease, Handbook of Nutrition, American Medical Association, ed. 2, Philadelphia, The Blakiston Company, 1951, chap. 17, p. 351.
2. Weiss, S.: Diet and Bright's Disease, Connecticut M. J. 5:496, 1941.
3. Jolliffe, N., and Smith, H. W.: The Excretion of Urine in the Dog: II. The Urea and Creatinine Clearance on Cracker Meal Diet, Am. J. Physiol. 99:101, 1931.
4. Van Slyke, D. D.; Rhoads, C. P.; Hiller A., and Alving, A.: The Relationship of the Urea Clearance to the Renal Blood Flow, Am. J. Physiol. *110*:387, 1934.

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VOL. 9, NO. 1 JANUARY, 1952


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1. Perloff, W. M.: Am. J. Obst. & Gynec. *58*:684, 1949.

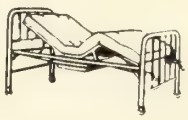
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1. Hutcheson, J. M.: Management of Cardiac Failure. *Virginia Med. Monthly*, 74:458, Oct., 1947.
2. Noth, P. H.: Pick's Disease: A Record of Eight Years' Treatment with Salyrgan, Ammonium Nitrate, and Abdominal Paracentesis. *Proc. Staff Meet. Mayo Clin.*, 12:513, Aug. 18, 1937.

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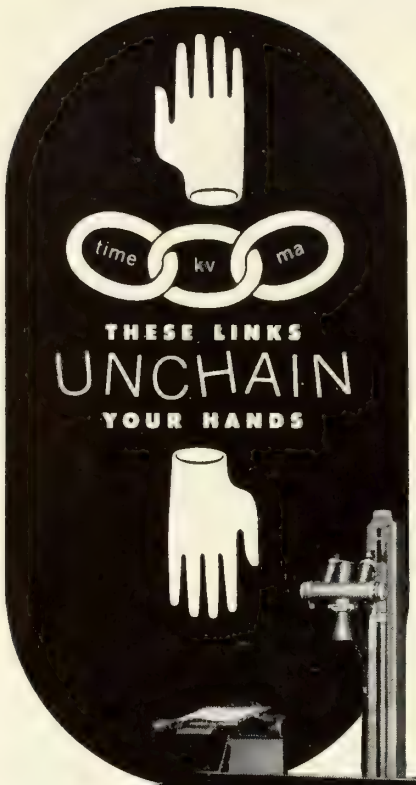
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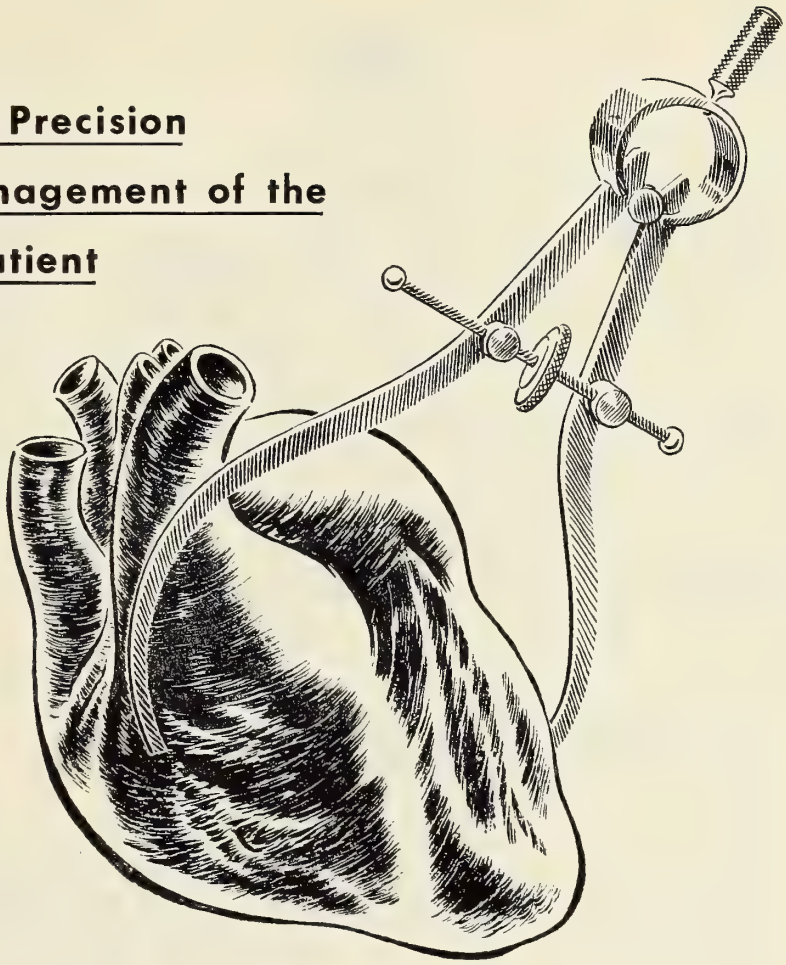
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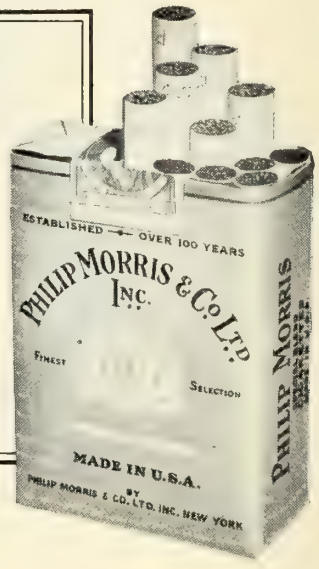
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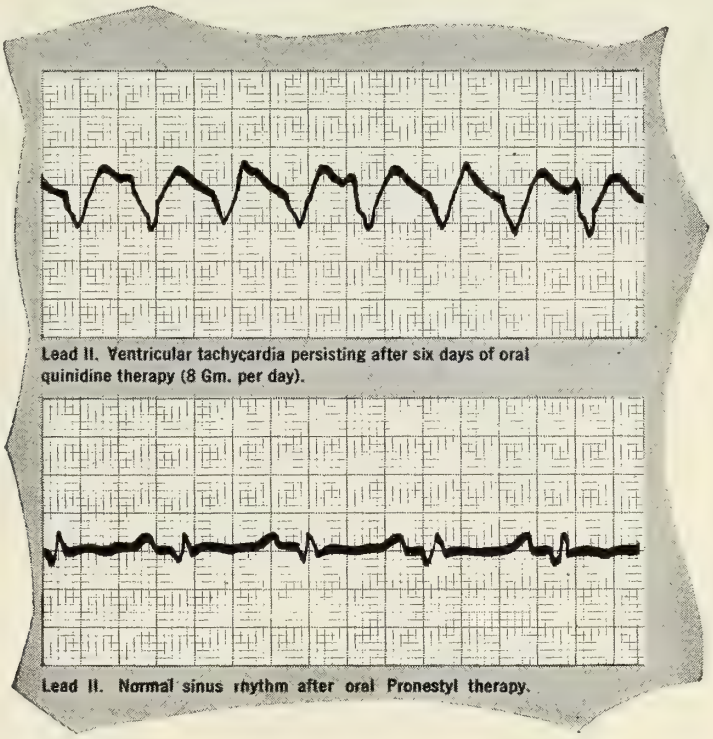
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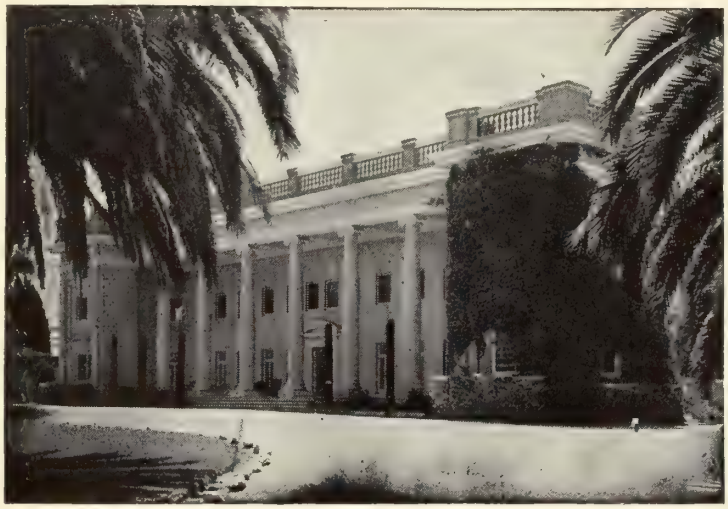
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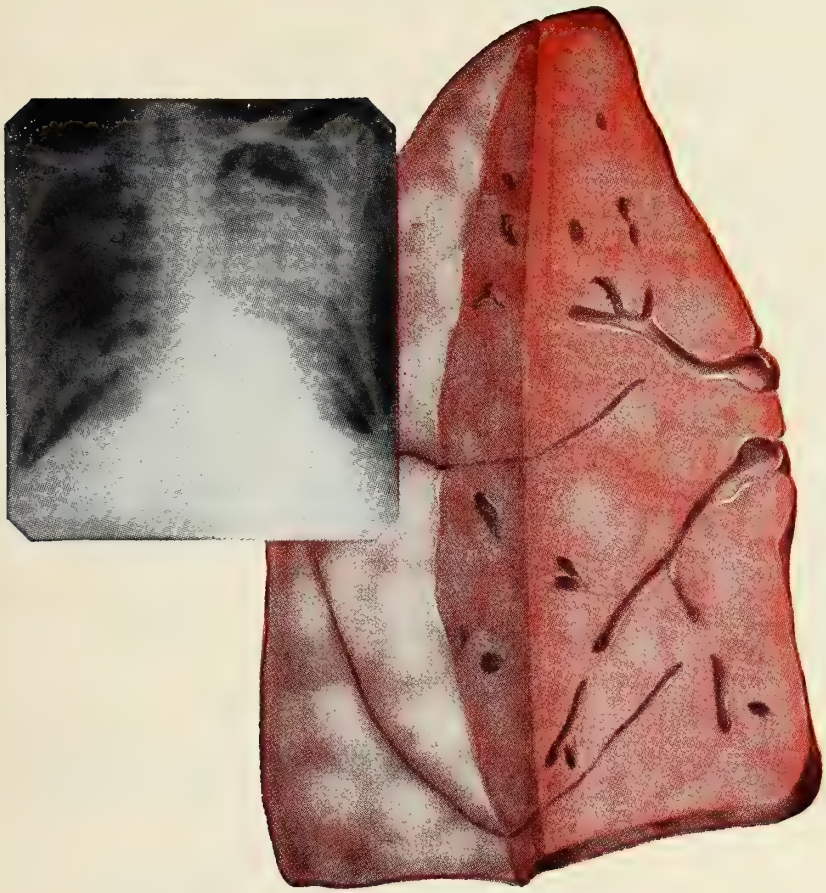
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*Potterfield, T. G., and Starkweather, G.A.: J. Philadelphia General Hosp. 2:6 (Jan.) 1951.*

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* Hamblen, E. C.: Some Aspects of Sex Endocrinology in General Practice, North Carolina M. J. 7:533 (Oct.) 1946.

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**J.A.M.A. 146:35, 1951.*

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1. Perloff, Wm. H. (1951), Treatment of the Menopause. II. American J. Obst. & Gynec., 61:670, March.

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ARIZONA MEDICINE
Journal of Arizona Medical Association

VOL. 9, NO. 1 JANUARY, 1952

# Original ARTICLES

## THE SURGICAL TREATMENT OF CARCINOMA OF THE COLON AND RECTUM

John Van Prohaska, M. D. and Michael C. Govostis, M. D.
Chicago, Illinois

Within recent years numerous contributions have been added to the surgical management of cancer of the colon and rectum. These contributions range from primary end-to-end anastomosis after resection of the left colon(1) to "pull through" operations devised for the preservation of the anal sphincter(2). With these advances, one is aware of the gradual return to the more adequate operation for cancer of the rectum, the combined abdomino-perineal resection of Miles. It seems that sufficient time has elapsed to evaluate these efforts and express them in terms of the present day concept of the problem.

The prevalence of cancer of the colon and rectum remains unchanged. Approximately 12 per cent of all malignant diseases in the human body take their origin in the colon and rectum(3). The distribution of carcinoma within the colon and rectum shows that 45 per cent of all malignant tumors occur in the rectal ampulla, 18 per cent in the rectosigmoid, 14 per cent in the sigmoid, 17 per cent in the flexures and transverse colon, and about 6 per cent in the cecum. Squamous cell carcinoma of the anus is relatively rare, and occurs in an incidence of one-half of one per cent of all the malignancies in the colon and rectum.

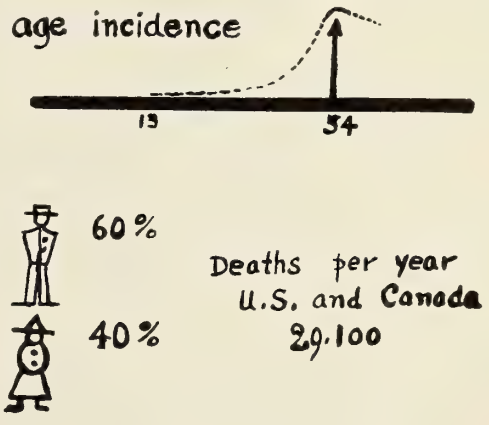
This statistical knowledge immediately gains in importance when we realize that 45 per cent of this type of cancer may be diagnosed by digital examination and an additional 30 per cent by a sigmoidoscopic examination.

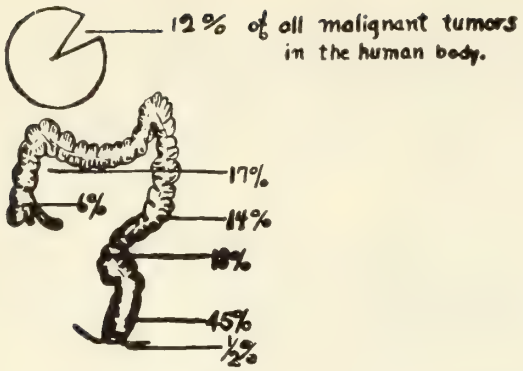
Read before Sixtieth Annual Meeting, Arizona Medical Association, Tucson, Arizona, May 2, 1951.

The greatest mean average incidence is at the age of 54. From this focal age group the incidence tapers down toward both age extremes. The disease takes a slightly greater toll of males than females.

Early cancer of the large bowel and rectum seldom produces a diagnostic pattern of symptoms which the patient or physician can readily recognize as the unmistakable sign of an organic disease. Rectal bleeding, discharge of bloody mucus, rectal discomfort, fullness, and tenesmus are symptoms and signs which warrant prompt digital, anoscopic, proctoscopic, and x-ray examinations.

Similarly, the persistent disturbance of bowel habits, alternate diarrhea and constipation, bloating, abdominal cramps, loss of weight, et cetera, should suggest the possibility of cancer of the large bowel and lead to a proper physical and x-ray examination. By routuine digital and sigmoidoscopic examination at least 75 per cent of






cancer arising in the distal sigmoidal segment and rectum could be brought within the scope of early diagnosis. It is regrettable to note that the average duration of symptoms is 8 months before diagnosis and proper treatment are established.

In the pathogenesis of cancer of the large bowel, the surgeon must particularly consider the relationship of carcinoma of the colon to polyps, multiple familial polyposis, and the mode of spread by cancer by lymphatic and direct extension to adjacent structures.

The familial type of multiple polyposis is essentially a malignant disease of the colon which in most instances must be treated by a total colectomy. Only when the disease occurs in early childhood should one entertain the sparing of the colon until the child is 15 to 16 years old, because cancer seldom develops before the age of 16. Total colectomy would have a profound effect on the physical development of the growing child.

EARLY DIAGNOSIS POSSIBLE

1. By digital and anoscopic examination....45%
2. Sigmoidoscopic examination, additional.30%

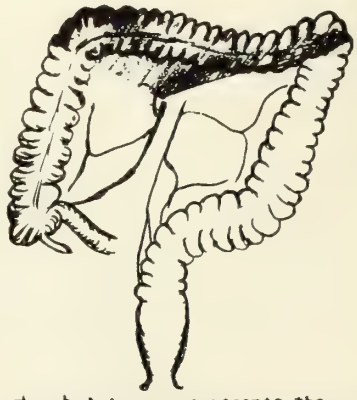
Total .....75%

Single polyps, sessile or pedunculated, often cause difficuluty in the proper differentiation of benign from malignant growths. The microscopic pattern of these polyps is often such that the pathologist cannot state definitely whether they are benign or malignan. The differentiation between malignant and benign polyps is often made by gross inspection in situ. Thus, the burden of responsibility for radical or minor surgery is placed almost entirely on the judgment of the surgeon.

Cancer of the large bowel and rectum spreads rather frequently by lymphatics, by infiltration to adjacent structures, and by distant metastases to the liver.



Right Hemicolectomy for Carcinoma of the Cecum and Ascending Colon. For Cancer of the Hepatic Flexure a larger segment of the Transverse Colon should be removed.



The shaded area represents the amount of bowel removed for Cancer of the Transverse Colon. The Middle Colic Artery is included.

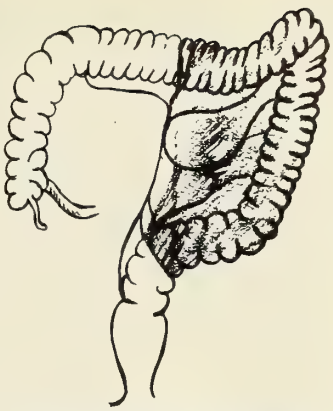
Upon the evaluation of this knowledge rests our present day concept of the surgical management of cancer of the colon and rectum. The lymph nodes draining the various areas of the large bowel are situated along the arcades of the colonic vessels. Therefore, an adequate cancer resection consists of the removal of large segments of the colon and mesocolon with the associated artery removed at its origin from the superior mesenteric. The inferior mesenteric artery is sacrificed in the left radical hemicolectomy.

Statistical data indicate that the best five-year cures of cancer of the large bowel are obtained when the lesion is situated in the cecum(4). This location is particularly adaptable to a wide anatomic resection. In the usual resection, the right colic and ileocolic arteries are divided at their origin from the superior mesenteric. A segment of the terminal ileum, cecum, ascending colon, and the right half of the transverse colon are removed with the corresponding lymph-bear-

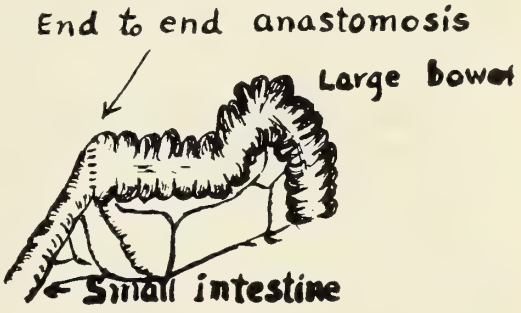
ing meso. The continuity of the bowel may be re-established by an end-to-end, end-to-side, or side-to-side anastomosis, depending upon the training and experience of the surugeon. We prefer an end-to-end anastomosis accomplished by the open method. The difference in the size of the lumen between the ileum and the transverse colon is compensated by sectioning the ileum obliquely at a 45-degree angle. Wangensteen(5) prefers a closed anastomosis. We use interrupted No. 000 silk for the serosal suture and a continuous No 000 chromic for the hemostatic, mucosal stitch. The V-shaped defect in the meso is carefully sutured on both surfaces. The posterior peritoneum which is opened in dissecting the ascending colon and hepatic flexure need not and cannot always be peritonealized.

The lesions of the hepatic flexure require the same type of radical right hemicolectomy. The carcinomas of the transverse colon should be resected by the removal of the entire transverse colon and the omentum. The malignant tumors of the splenic flexures present the most discouraging five-year survival rate(6). It is strange that most surgeons advise right hemicolectomy for a right-sided tumor, whereas only a few surgeons report truly radical resection of the left colon. It has been suggested that carcinoma of the splenic flexure and of the descending colon be treated by a left radical hemicolectomy consisting of the resection of the flexure, part of the transverse colon, and descending colon, down to the sigmoid (7, 8, 9). To this we wish to add that in some cases splenectomy may remove involved lymph-bearing areas. The bowel continuity is re-established by an end-to-end anastomosis between the transverse and sigmoid colons. The well prepared and decompressed bowel will seldom need a proximal colostomy as an insurance for the safe healing of the anastomosis. A primary anastomosis shoud be made only when the blood supply of the bowel is adequate, when there is no tissue soiling, and no tension on the anastomotic line. Meticulous serosa-to-serosa approximation is essential.

Carcinomas situated at or below the peritoneal reflexion can only be adequately treated by a combined abdomino-perineal resection. Since an anastomosis below the peritoneal reflexion presents serious technical difficulties, it is only natural that adequancy of cancer resection is often sacrificed for the safe accomplish-



Left Hemicolectomy for Cancer of the Splenic Flexure and Ascending Colon. For malignancies at or just above the Peritoneal Reflexion, the resection is carried further downward.




ment of the anastomosis.

In the dissection of the rectosigmoid contain ing a carcinoma some malignant cells of necessity are broken off and become adherent to the mucosa below the major tumor mass. It seems plausible that implantation may take place. This phenomenon was observed in three of our patients who developed recurrences at or just below the line of anastomosis. Garlock and Ginsberg (10) reported 41 per cent recurrence at the anastomotic line in cases where the tumor was located 12½ centimeters or less from the anus, and only 10 per cent recurrence for tumors situated higher than this level.

The low anastomosis, the "pull through," and other sphincter saving operations should be reserved for patients with a locally resectable lesion complicated by palpable, but of course not overwhelming, hepatic metastases. The reason for doing any kind of section at all on these patients is twofold: first, there is enough evidence in our own cases that many patients may survive 2 to 5 years after such a resection, even though they had undisputed evidence of hepatic metastases at surgery; secondly, cancer of the rectosigmoid and rectum develops most unpleasant complications of uncontrollable pain, bleeding,

tenesmus, and the possibility of perforation into the urinary bladder, none of which can be relieved by a simple colostomy.

There is, then, a definite place for the various types of sphincter-saving operation. In the final analysis the surgeon must fit the operation to the individual needs of the patient. We are certain that senile patients with a limited span of life, or those in whom colostomy would create physical or psychic incompatibilities, might be better served by a spincter-saving operation.

There is no doubt that good pre-operative care directed toward a thorough cleansing of the bowel, the correction of fluid, mineral, and protein deficiencies, have led to a welcome reduction of surgical mortality. A typical pre-operative plan should include the following:

1. Low residue, high protein, high carbohydrate diet.
2. Vitamin B and Ascorbic Acid.
3. Admission to hospital at least 3 days before surgery.
4. Sulfathalidine, 15 grains 6 times daily for 5 days.
5. Cleansing enema before administration of Sulfathalidine is begun.
6. Aureomycin, 500 milligrams every 6 hours for two days before surgery.
7. Vitamin K, 75 milligrams once daily while patient is on antibiotics.
8. Cleansing enema night before surgery.
9. Blood transfusion started at beginning of operation.

Post-operatively, the patient must again be kept in adequate fluid, mineral, erythrocytic, and protein balance. He must receive further protection from infection by the parenteral administration of antibiotics until he is again able to take them by mouth. Even though the merit of early rising provokes some divergent opinions, it appears to be a welcome program in an uneventful convalescence.

Patients admitted to the hospital with an obstructive carcinoma of the bowel must be decompressed. Although an adequate decompression occurs spontaneously in many patients, one must not hesitate to perform a colostomy when conservative measures fail to relieve the obstruction. The colostomy must be placed in such a way that the abdomen may again be entered for a successful execution of either a primary resection or the Miles operation. A colostomy in the right half of the transverse colon appears to be the best suited for an obstructing carcinoma of the left colon. An obstruction in the right colon may be relieved by the Miller-Abbott tube, a first-stage cecostomy, ileostomy, or by a short-circuit anastomosis between the ileum and the transverse colon.

Carcinoma of the rectum and colon with extension to adjacent structures is not a hopeless problem. Radical surgery may be performed if the usual criteria of operability are followed. The table presents examples of radical resection of tumors and adjacent structures:

| | |
|---|---|
| Surgical mortality | 0 |
| 1 year survival | 91% |
| 2 year survival | 75% |
| 5 year survival | 25% |

Most authors report 50 to 54 per cent of five-year survivals as the over all result of surgical treatment of carcinoma of the colon and rectum(11). This corresponds rather closely to results observed on our own patients.

Resectability, however, varies greatly among different surgeons. Series from 45 to 98 per cent are reported. Garlock and Klein(12) reported a resectability of 66.7 per cent on ward patients and 81.5 per cent on private patients. Allen's(13) series ran as high as 96 per cent. Our own series, based on 100 consecutive cases of all bowel and rectal carcinomas, indicates a resectability rate of 92 per cent.

Most authors report a surgical mortality of about 5 per cent. In our cases we have had only 1 per cent mortality in operations on the large bowel whereas our mortality in abdomino-perineal resections is 6 per cent.

*Conclusions*

Seventy-five per cent of carcinomas of the colon and rectum are so situated that they can be readily diagnosed by digital and sigmoidoscopic examinations. The appreciation of this simple knowledge should lead to improvement in early diagnosis.

It is generally agreed that carcinoma of the right colon is best treated by radical right hemicolectomy. There is less uniformity of opinion as to what constitutes an adequate resection of cancer situated in the left colon or rectum.

The authors advocate wider resection of the left colon for sigmoidal and splenic flexure carcinomas. We further advocate the one-stage combined abdomino-perineal resection for malignancies situated at or below the peritoneal reflexion.

| PT. | *Diagnosis* | *Operation* | *Survival* |
|---|---|---|---|
| B. C. | Ca. of rectum | Miles plus ½ of urinary bladder | 3½ yrs.—liver metastases |
| B. J. | Rectosigmoid with bladder fistula | Anterior resection plus ½ of bladder | Alive and well—3 years |
| A. K. | Ca. of rectum | Miles operation. Hysterectomy | Alive and well—7 years |
| T. P. | Ca. of rectum | Miles operation. Hysterectomy | Four years |
| A. G. | Ca., splenic flexure | Left hemicolectomy; splenectomy | Alive and well—7½ years |
| B. K. | Ca., hepatic flexure | Rt. hemicolectomy; partial gastrectomy; Partial pancreatecoduodenectomy | 11 months—metastases |
| A. G. | Ca., splenic flexure with obstruction | Colostomy; left hemicolectomy; partial gastrectomy; partial pancreatectomy; partial left leaf of diaphragm | Alive—1½ years |
| McD. R. | Ca., transverse colon | Resection of transverse colon plus partial hepatectomy | 1 year—liver metastases |
| P. K. | Ca., cecum and Ca., splenic flexure | Rt. hemicolectomy; resection of splenic flexure; left hepatic lobectomy | Alive—12 years<br>Alive— 6 years |
| D. J. | Ca. of sigmoid | Colostomy—anterior resection ⅓ urinary bladder, part of abdominal wall | Alive—3 years<br>has metastases |
| C. R. | Ca., ascending colon, duodenocolic fistula | Rt. half of colon, partial stomach, duodenum, and pancreas | 2½ years—metastases |
| K. J. | Multiple polyposis | Sigmoid colon, part of abdominal wall, primary anastomosis | 2 years—metastases |


REFERENCES

1. Dixon, C. F., Anterior Resection for Malignant Lesions of the Upper Part of the Rectum and Lower Part of the Sigmoid. Ann. Surg. 128:425-442, Sept. 1948.
2. Babcock, W. W., Radical Single Stage Extirpation for Cancer of the Large Bowel with Retained Functional Anus. Surg. Gyn. Obst. 85:1, 1947.
3. Bacon, H. E., Anus, Rectum, Sigmoid Colon, p. 601, 3rd Ed.
4. Gilchrist, R. K. and David, V C., Prognosis In Carcinoma of Bowel. Surg. Gyn. & Obst., 86:359, 1948.
5. Wangensteen, O. H., Primary Resection (Closed Anastomosis) of Rectal Ampulla For Malignancy With Preservation of Sphincteric Function. Surg. Gyn., & Obst. 81, 1945. Surg. 14:403, 1947.
6. Gilchrist, R. K. and David, V. C., Prognosis In Carcinoma Of Bowel, Surg., Gyn., & Obst., 86:359, 1948.
7. Halligan, E. J., Perkel, L. L., and Catlaw, J. K., Surgical Treatment of Carcinoma of the Colon and Rectum. Am. J. of Proctology, v. 1, No. 4:171-182, Dec. 1950.
8. Wangensteen, O. H., Cancer of Colon and Rectum, Wisc. Med. J. 48:591-597, July 1949.
9. Rosi, P. A., Hemicolectomy In Treatment of Carcinoma of the Left Colon. Quart. Bull., Northwestern Univ. Med. School, 23:376-386, 1949.
10. Garlock, J. H. and Ginsberg, L., An Appraisal of the Operation of Anterior Resection for Carcinoma of the Rectum and Rectosigmoid. Surg., Gyn., & Obst., 90:525-534.
11. Grinnell, R. S., Lymphatic Metastases of Carcinoma of Colon and Rectum. Ann. Surg. 131:494-506. 1950.
12. Garlock, J. H. and Klein, S. H., Carcinoma of the Colon and Rectum. Arch. Surg. 59:1289-1303. 1949.
13. Allen, A. W., Welch, C. E., and Donaldson, G. A., Carcinoma of the Colon. Ann. Surg. 126:19, 1947.

# THE TREATMENT OF SKIN CANCER

Kenneth C. Sawyer, M. D.
Arthur R. Woodburne, M. D.
Denver, Colorado

Because of accessibility and innate low-grade of malignancy, carcinoma of the skin should be the most favorable malignant neoplasm to diagnose, treat, and cure. If such tumors are unrecognized, neglected, or treated inadequately, however, death is just as certain and decisive as it from malignancies having their origin in more vital organs of the body.

Fortunately, the intensive program of the American Cancer Society and other educational efforts have been of tremendous help in having these patients come to us when lesions are small and confined to the skin. Treatment now results in an infinitely higher percentage of permanent cures than it was possible to obtain twenty years ago.

Skin cancer in general is most simply classified in the three major groups:

1. Squamous cell carcinoma.
2. Basal cell carcinoma
3. Melanoblastoma.

Squamous cell carcinoma is a sequel of involutional changes in the squamous cells of the epithelium. Hereditary factors are important. The pink-skinned, blue-eyed individual is particularly predisposed to this type of cancerous change. Chemical, actinic, and weathering effects are frequently contributory causes. One typical example of this type in this region is the Scotch-Irish rancher who worked out-of-doors all of his life. His skin ages prematurely, and horny keratotic patches develop over the dorsal surface of the hands, the lips, ears and cheeks, in other words, those areas exposed to the sun and weather. Squamous cell carcinomas are usually preceded by senile keratoses. The base of the horny patch becomes infiltrated and later ulcerates. A hard pearly rim forms about the ulcer.

The basal cell carcinoma is characterized histopathologically by uniform polygonal basophilic staining cells in strands and groups. It is thought that these carcinomas are usually malignant degenerative changes of accessory skin structures, such as the ducts of sweat and sebaceous glands or hair follicles.

Melanoblastoma is a malignant tumor of pigmented naevus cells. Many times these tumors arise in pigmented moles, but naevus cells are found in all parts of the skin, so that melanoblastomas may arise in apparently normal skin. Hairy and pigmented lesions are not precursors of melanoblastoma. The most formidable blemish is the flat, pigmented junctional naevus of the sole, palm, or other areas subject to trauma from occupation or clothing.

The diagnosis of cancer of the skin is made or suspected by the gross appearance of the lesion. The irregular outline, everted edge, the firm consistency, and the fixed base of a skin cancer, all serve to mark its identitfy at a very early stage. Biopsy from the clean borders of the lesion or excision of the entire tumor, with microscopic examination of the excised tissue, is mandatory in any chronic skin lesion.

There is a difference of opinion regarding the most favorable method of treating carcinoma of the skin. The application of escharotics, electrocoagulation, excision, and radiotherapy all have their advocates. These are all acceptable, providing that the tumor is destroyed completely by the method of treatment chosen. The mode of treatment is of less importance than the skill of the operator in its use. One should bear in mind that the choice of the ideal method can be made only if all forms of treatment are available and if the choice is independent of any vested interest in an x-ray machine, a quantity of radium, or the possession of the requisite skill and courage to undertake major surgery.

When the control of the disease can be accomplished with equal certainty by any of the available methods, preference should be given to the treatment which gives the most satisfactory cosmetic result.(1) The location, amount of extension, and history of previous treatment are important factors in selecting the therapy for the particular tumor being considered.

We have hesitated to recommend roentgenotherapy in the treatment of carcinoma of the eyelids, the skin of the ears and nose, or any

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region contiguous to cartilagenous or bony structures, because of past experience with painful chondronecrosis. Merritt(2), however, states that well-filtered radiations applied with convenient protraction eliminate these untoward effects, while assuring the success of this conservative treatment. Regato(3), who has had extensive experience in treating skin cancers, believes that roentgenotherapy properly given cannot be excelled in treating neoplasms in these locations. He believes, and we agree, that roentgenotherapy is actually contraindicated in the treatment of carcinomas arising from scars.

Topical application of radium has not been effective; however, interstitial implantation of radon seeds or radium needles have been very successful in the hands of some. (Cole and Driver (4) and Lehmann and Pipkin (5)).

Lesions of the lip, vulva, dorsal surface of the hands are squamous cell in type, and if larger than 2 cm. in diameter or longer than six months duration should be exercised surgically with lymph channel and lymph node removal.

Pigmented naevi, junctional naevi and any pigmented spots which begin to scale or show tendency to grow in size or thickness should be widely excised. The excision should go beyond the border of the lesion in all directions at least 1 cm. distal to any evidence of tumor, and in larger neoplasms to include the deep fascia.

This report is based upon our experience with 374 cases of skin cancer: 268 of these lesions were less than 2 cm. in diameter and showed no evidence of local extension nor metastasis to regional or distant lymph nodes. This group was treated by the following technique:

1. Local infiltration anesthesia.
2. Biopsy of part tumor for microscopic study.
3. Electrocoagulation of all evident tumor.
4. Curettement of the entire lesion with a small spoon down to normal tissue. (Wide experience with the dermal curet will allow the operation to go well beyond any gross tumor).
5. Electrocoagulation of a few millimeters of the surrounding tissue.
6. X-ray therapy of 1,000 units, 100 Kv. P., 5 M. A., 1 mm. aluminum filtration once a week for three weeks.

The above combined therapy was originally recommended by McKee(6) thirty years ago, and it has been in general use by dermatologists since Elliot and Welton(7) reported 1700 consecutive cases of this type with a five-year cure rate of 97%.

The second group of 106 cases of skin cancer was treated by surgical excision. This group consisted of 23 basal cell carcinomas, 69 squamous cell carcinomas, and 14 malignant melanomas. 23% of this series had had some type of previous treatment. The procedures employed in treating these cases were as follows:

1. Local excision.
2. Local excision with application of skin graft.
3. Excision with prophylactic lymph node dissection.
4. Excision with therapeutic lymph node dissection.
5. Amputation.

The patients in group 1 have been followed for four years. There have been seven recurrences and no deaths, which makes the four year cure rate 97.4%.

The patients in group 2 have been followed for 3 years. There have been 13 recurrences and 6 known deaths of which 3 were patients with melanoblastoma.

In this less favorable series 12.26% of the patients had a recurrence or extension of their original tumor and required subsequent treatment. 6 or 5.66% of the patients died. The curability rate in group 2 was 82.08.%

## SUMMARY

The present day concepts of the treatment of cancer of the skin have been briefly discussed. The three and four year end results of 374 cases of skin cancer treated by electrocoagulation with irradiation and by surgical excision have been presented. The importance of early diagnosis and complete destruction of the primary skin cancer has been re-emphasized.

1839 High Street.

### BIBLIOGRAPHY

1. Ackerman, Lauren V., and Regato, Juan A. del: Cancer, Diagnosis, Treatment and Prognosis. 151-C. C. Mosby, St. Louis, 1947.
2. Merritt, E. A., and Rathbone, R. R.: The Treatment of Epithelioma Involving Cartilage Using 220 K. V. P. and Heavy Filtration. Radiology 24:701-707, 1935.
3. Regato, Juan A. del: Discussion of Article by Eberhard, T. P.
4. Cole, H. N., and Driver, J R.: Radium Dosage and Technique in Carcinoma of the Skin. Am. J. Roentg. & Rad. Therapy, 33:682, 1935.
5. Lehmann, C. F., and Pipkin, J. L.: Interstitial Radium Therapy. Arch. Dermat. and Syph., 63:312-321, 1951.
6. Mac Kee, G. M.: X-ray and Radium in the Treatment of Disease of the Skin. 535-Lea and Febiger, Philadelphia and New York, 1921.
7. Elliott, J., and Welton, D. G.: Epithelioma. Arch. Dermat. & Syph., 53:307-323, 1946.

# SPOROTRICHOSIS

(Report of a Case)

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Sporotrichosis has been reported from all countries. In North America, the disease appears to be more prevalent in the north central part of the United States. However, isolated cases and small series have come from widely scattered areas of the country. The disease is most often encountered in adults, although Fogel and Martin(1) record the infection in a girl seven years old; and Foerster(2) in a review of 148 reported cases found 21 instances in children between two and twelve years of age. Foerster stressed the occupational nature of the infection and the importance of shrubs and soil in its transmission. Other dermatologists have observed cases in florists, all of which followed trauma. The single initial lesion, or sporotrichotic chancre, as described by Campbell, Frost, and Punkett(4), may remain localized for some time before evidence of a characteristic lymphangitis appears, or it may not appear at all. To my knowledge, there has been no case reported in Arizona, although it is common in Mexico and not unusual in Texas. Sporotrichum, as the dermatologist ordinarily sees it, is of the lymphatic variety, beginning with the initial nodule or ulcer, usually on the hand or other exposed parts, and spreads by the lymphatics with formation of a string of nodules which later separate. All available evidence suggests that man acquired sporotrichum from contact with plants, although the disease may be contacted from infected animals or animals acting as infected carriers. This patient, in question, was bitten by an insect and apparently infected with the disease.

The diagnosis of sporotrichum cannot be made with certainty except by cultivation and identification of the organism. The intradermal test with sporotrichum is usuaully position, although Smith(3) has reported cases with a negative sporotrichum test. Sporotrichosis almost uniformly responds favorably to the administration of iodine in various forms. In this particuular case, iodines were not advisable and gantrisin proved effective.

## REPORT OF CASE

Mr. J. H. R., a 33 year old white male, was referred to the Dermatology Clinic at the Veterans Administration Hospital, Tucson, Arizona, on August 27, 1950, because of a group of pustules over the external malleolus of the left ulna. The lesions consisted of small vesicles and pustules, one of which was pea-sized and the remaining very superficial and smaller. The history given was that of an insect bite on his wrist about a week previously, which became reddened, pruritic and with the appearance of a pustule. He was treated by his ward doctor with boric acid compresses and sulphathiazole cream locally, with no appreciable improvement. The appearance of the lesion, when first seen, was suggestive of a typical insect bite with folliculitis and secondary pyoderma from scratching. There was no evidence of lymphangitis nor lymphadenopathy. The treatment was changed from sulfathiazole cream to bacitracin ointment with normal saline packs. He was seen again in one week with some improvement noted. Culture and direct smear were taken at that time in order to determine the type of organism present. The following week the patient returned with a typical granuloma of the wrist with discrete, erythematous nodules scattered along the flexor aspect of his left arm. A direct smear was again made and cultures taken for sporotrichosis after discontinuing the local treatment for 48 hours. The previous culture and direct smear were negative for any evidence of fungus infection. Sporotrichum was grown on several media when the second culture was taken. As the patient had been hospitalized for chronic pulmonary tuberculosis, reinfection type, with left tuberculous cervical adenitis, active, iodides were not prescribed but gantrisin (Hoffman-LaRoche) ordered, grams one q 4 h. Complete healing of the lesions was accomplished, probably hastened, by the use of x-ray therapy. As a luecopenia developed, the dosage of the gantrisin was reduced to one tablet q 4 h after a rest period of several days. Repeated cultures have proven negative for sporotrichosis. An interesting note in this patient's hospital course was that there was considerable enlargement of the cervical glands during the period of the sporotrichum in-

Note: Case reported at Clinical Conference, Veterans Administration Hospital, Tucson, Arizona, November, 1950.

fection with marked increase in tenderness of the glands.

## COMMENT

The purpose of this report is to call attention to the fact that sporotrichosis must be kept in mind in a differential diagnosis of many indurant types of lesions, regardless of whether or not the usual clinical picture is present. This particular case proved to be the typical lymphatic variety (although early cultures taken did not substantiate the diagnosis), which responded to sulfonamide therapy instead of the usual iodides.

Reviewed in the Veterans Administration and published with the approval of the Chief Medical Director who assumes no responsibility for the opinions expressed or the conclusions drawn by the authors.

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### REFERENCES

1. Fogel, D. H.; and Martin, D. W.; Sporotrichosis: Report of Case, General Pediatrics, 17:193 (August) 1940.

2. Foerster, H. R.; Sporotrichosis, an Occupational Dermatosis. J.A.M.A., 87:1605, 1926.

3. Smith, Leslie M.; Sporotrichosis: Report of Four Clinically Atypical Cases. Southern Medical Journal, Volume 38:505 (August) 1945.

4. Campbell, H. S.; Frost, K.; and Punkett, O. A.; Sporotrichotic Chancre. Arch. Dermat. and Syph., 28:61 (July) 1933.

# WHAT TO KNOW ABOUT MODERN CHEST SURGERY

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I have presumed that in giving me this title the program committee desired that I should discuss, insofar as the time allotted will permit, some of the things that those who are not thoracic surgeons should know about modern chest surgery. This, it seems to me, is concerned with the diagnosis of surgical lesions, the indications for operation and the results that may be anticipated without and from surgical therapy. It involves only an incidental knowledge of technique.

## TRAUMA

Injuries to the chest come under the care of every doctor. The management of simple fractures of one or two ribs presents, as a rule, little difficulty. When multiple fractures occur paradoxical movement of the wall is permitted and must be controlled. The most serious complications result from failure to clear secretions. This may be related in part to injury to the lung but is mainly due to the paradoxical movements of the chest wall and the aggravation of pain which coughing produces. Excessive sedation aggravates the problem. The pain should be controlled by blocking the intercostal nerves posterior to the fractures with novocaine, if necessary, repeatedly. If the airway cannot be cleared by coughing, tube aspiration or bronchoscopic suction must be employed. Such patients should, in my opinion, be nursed flat or preferably with the head low and not in the Fowler's position. It is illogical to ask them to raise material against gravity Failure to clear secretions may result in death from anoxia, atelectasis, pneumonia and, at a later date, lung abscess or bronchiectasis.

Spontaneous or traumatic pneumothorax particuluarly if it be of the pressure variety because of a valve-like opening must be recognized and treated promptly. It is relieved easily by syphon drainage under water. It is a not uncommon complication of other severe injuries such as find their way to neuro-surgical and orthopaedic services. Everyone responsible for the care of injured people should be familiar with the picture it presents.

Haemothorax may require early aspiration for the relief of pressure but should, at any rate, be aspirated after 24 hours. The first aspiration should not necessarily be complete but by the end of a few days the blood should all be removed. Aspiration is possible in the majority of cases. In a small proportion clotting occurs early and complete aspiration is impossible. Such clotted haemothoraces should be operated upon. It is true that small haemothoraces may be absorbed entirely with no permanent disability but extensive ones result in permanent limitation of chest wall and diaphragm movement and serious curtailment of respiratory reserve. The fear of infection through aspiration is not well founded. Carefully controlled breathing exercises during the period of recovery are very important. When serious bleeding into the chest continues it is much more likely to be coming from a systemic than a pulmonary vessel. The pressure within the pulmonary circulation is so low that with retraction of injured lung clotting occurs readily unless a major vessel be torn. Presistent bleeding demands thoractomy. If a tear in the wall of a bronchus is recognized, the chest should be opened and the opening closed.

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Should such a patient recover without operation complete atelectasis of the lung, stricture of the bronchus and usually chronic empyema result. Cure can be accomplished only by pneumonectomy and complete thoracoplasty.

## EMPYEMA

An important change has taken place in the treatment of empyema. In the pre-antibiotic days there was no need to hurry the aspiration of pleural fluid in cases of pneumonia unless by its volume it was interfering with ventilation or contributing to the toxicity of the patient. Today pleural fluid should be cultured and if organisms are encountered their sensitivity to antibiotics should be determined in order that the appropriate antibiotic may be employed. Early and repeated aspiration with the instillation of suitable antibiotics cures most empyemas today. The aspiration should be as complete as possible and under no circumstance should air be allowed to enter and permit separation of the pleural surfaces. Incomplete aspiration and the production of a pyopneumothorax is likely to result in failure of the method and necessitate surgical drainage. Spontaneous pyopneumothorax that results from rupture of a major lung abscess and is due to mixed infection has not been cured by aspiration and antibiotics in the past and has required early drainage. Recent experience suggests that aureomycin may control some of these cases. Unlike penicillin it would appear to enter the pleural space in therapeutic concentrations when administered systemically.

## LUNG ABSCESS

There seems little doubt that the incidence of lung abscess in all clinics has been reduced by the prompt use of antibiotics, especially penicillin, in the early stages of pneumonitis. Antibiotics appear to have been of definite value in the treatment of well formed abscesses. We have had a feeling recently, however, that early optimism in regard to the percentage of cures that we were obtaining may not have been justified. There has been a recent flood of cases that had gone on to chronicity that could be treated only by lobectomy or pneumonectomy. Patients with abscess of the lung that are not responding promptly to antibiotic therapy and the usual so-called medical treatment should be seen in consultation by a surgeon. One should be aware that recession of fever, lessened pulse rate and increased sense of well-being do not mean necessarily that spontaneous recovery is going to take place. The clinical evidence of improvement must be supported by radiological evidence.

## BRONCHIECTASIS

The physician should be aware of the gloomy prognosis in cases of bronchiectasis that are not or cannot be operated upon. I have a feeling that this is not so bad since penicillin has become available for the treatment of pneumonic episodes particularly if postural drainage be carried out conscientiously. The results of surgery in disease sufficiently localized for surgical removal are, however, so brilliant that there should be no hesitation about advising operation. The physician who fails to advise operation in suitable cases is, I believe, negligent. The mortality in unilateral lobectomy for bronchiectasis should not exceed two per cent. For bilateral cases it will remain considerably higher. The proportion of lung that can be removed without serious late disability has not as yet been decided. One must emphasize that bronchiectasis cannot be excluded by physical examination and plain chest films. Bronchograms must be done and these must be complete. Cure depends entirely upon removal of all diseased bronchi. Many adults are still presenting themselves for treatment of disease which dates from infancy or childhood. This will, I hope, be corrected in the future. Bronchiectasis interferes seriously with physical and mental development. Even very young children withstand operation well. Dr. Wilkinson of the Hospital for Sick Children, Toronto, has done 70 lobectomies, 10% of which were for bilateral disease, in children from 2 to 14 years of age without a death and 9 pneumonectomies with 2 deaths during the past 5 years. One death was due to a technical error and could have been avoided, the other was from secondary haemorrhage on the 37th day. In the future, many patients who are allowed today to reach adult years before operation will, I hope, be cured in childhood.

## TUBERCULOSIS

The practitioner is unlikely to have much direct relation to the surgical treatment of tuberculosis since most tuberculous patients are housed and treated in special institutions. He should be familiar, however, with what can be accomplished by surgery since patients and their relatives will usually seek his advice before submitting to operation. He should know that

relapse of apparently arrested disease is frequent and that a high proportion of these relapses can be prevented by collapse therapy. In the past many patients have been advised against submitting to surgery because of a belief that operative treatment was unlikely to be successful and certain to produce much disability. One should not accept responsibility for such advice unless he is familiar with what has been and is being accomplished. The death rate from tuberculosis in the Province of Ontario reached a new low of 19.2 per 100,000 population in the year 1948, in 1947 it was 24.9 per 100,000. It had decreased only 2 per 100,000 in the previous 9 years. This sudden decrease of 20% in mortality figures is probably attributable to three factors, early diagnosis for which routine x-ray surveys must be given much credit, the fact that streptomycin was made available by the provincial government for all patients who might be benefitted by it, and the wider application of surgical therapy. One may say safely that few fields of surgical endeavour are more gratifying to the surgeon than the surgical treatment of pulmonary tuberculuosis.

## TUMORS OF THE CHEST WALL AND CHEST

Tumours of the chest wall, apart from those originating in the breast, are uncommon. Any soft tissue tumour may, of course, occur. The most interesting group is that arising from the ribs. Their pathology is that of bone tumours in general. They may be primary or secondary in nature. The latter need not concern us other than to realize that the ribs are frequently the site of blood borne metastases. The important thing to remember about primary tumours is that they should be removed when discovered whether that be accidentially in an x-ray film taken for another purpose or through the presence of a palpable tumour. Those that are not malignant have a tendency to undergo malignant change. If removed adequately they are cured in a high proportion of cases but inadequate primary removal is apt to end in disaster. Adequate removal involves opening the chest and operation should be undertaken, therefore, by one familiar with chest problems and with adequate facilities.

The majority of tumours within the chest apart from those arising from the lungs and bronchi, are mediastinal in origin. There is such a variety of these that one could not hope to discuss them in a presentation such as this. Perhaps I may be excused for reminding you that lesions of the cesophagus can be confused readily with tumours and that in case of doubt a barium examination should be done, that an aortic aneurysm or even an elongated asorta may not be easy to differentiate and that in the lower chest oesophageal hiatus herniae, herniae thru the space of Morgagni and even irregularities of the liver have led to errors in diagnosis. Tumours of the mediastinum show a marked tendency to malignant degeneration; with increase in size their removal becomes more difficult and more hazardous. Benign growths and cysts, with the possible exception of those that have attained great size, can be removed with a negligible mortality and their removal should be advised routinely. Trial doses of roentgen therapy are indicated when the x-ray picture is frankly that of lymph node involvement or when the mass is pretty obviously not amenable to surgery. All other lesions should be operated upon. Thoracotomy has now become as safe as laparotomy in proper hands.

## CANCER OF THE LUNG

I will not attempt to add to what I have said already in this regard.

## OESOPHAGUS

One cannot hope to do more than mention a few of the lesions affecting this struction. The most interesting recent work is that upon the oesophageal atresias. The practitioner should know that a new born infant who coughs, regurgitates and becomes cyanosed on attempting to take food probably has one of the forms of atresia. The diagnosis can be confirmed, as a rule, by attempting to pass a small rubber catheter and taking a flat plate of the chest and abdomen. A very small amount of lipiodol may be injected through the catheter but barium should not be used since it will pass directly or be aspirated into the lungs, produce bronchopneumonia and make recovery of the infant unlikely. Chiefly because of the work of the Boston and Ann Arbor groups these infants now have a chance for recovery if the diagnosis is made immediately and the infant is referred at once to a proper centre.

Great advances have been made in recent years in the technical aspects of surgery of the oesophagus. The majority of benign lesions such as diverticula, strictures and cardiospasm are amenable to survery. The long term results

of operation for cancer are still discouraging. This is due mainly to the lateness of diagnosis. It is unfortunate that so many of them do not produce symptoms that bring the patient to the doctor before local extension or metastases have made cure impossible. Improvement in the results that are being obtained should follow education of patients to an awareness of the importance of early symptoms and immediate investigation of these symptoms. The barium examination when doubtful, should be supplemented by oesophagoscopy. This procedure was undertaken formerly with trepidation because of the frequency with which complications occurred but in skilled hands these need not be feared unduly.

The increasing realization that partial gastrectomy is inadequate for many cancers of the stomach is bringing these cases into the field of thoracic surgery or at least under the care of the surgeons familiar with the transthoracic and thoracoabdominal approach.

CARDIOVASCULAR

The great strides that have been made in intrathoracic cardiovascular surgery are, I am sure, familiar to all of you. Treatment of patent ductus arteriosus and of coarctation of the aorta has now been established. The shunt operations of Blalock and Potts offer palliation, at least, to many children with the Tetralogy of Fallot. Arteriovenous fistulae in the lung can be recognized with certainty and treated by local resection of the area or by lobectomy. Real progress in intracardiac surgery awaits, in my opinion, the development of a technique by which the bloodless heart can be produced. The work of Gibbon of Philadelphia and Crafoord of Stockholm and more recently of Jongbloed of Utrehct is of great interest. Mustard and Chute have been working for some time in our laboratories on a technique very similar to Jonglboed's. Bigelow has been working for the past three years on hypothermia in the hope that the temperatures of warm blooded mammals may be reduced to a point at which they resemble the poikilotherm (hibernating animal). In their hypothermic state the oxygen requirements of the tissues are so low that it may be possible to deprive the brain of circulation for a sufficient time to permit of intracardiac procedures. The work is of great interest. A preliminary publication will appear in the near future.

I have presented in a somewhat rambling fashion, I fear, some of the accomplishments of thoracic surgery that should be known to every practitioner of medicine. We are on the verge, I am sure, of further technical advances in the field of cardiac surgery. In the main, future progress in this as in all other branches of surgery, will depend, without doubt, on increase in fundamental knowledge.

# PHOENIX *Clinical* CLUB

## MASSACHUSETTS GENERAL HOSPITAL CASE NO. 28112

**The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.**

First Admission: A seventy-five-year-old German-American retired store owner was admitted to the hospital because of weakness.

He was in good health until four months before entry, when there was gradual onset of weakness, dyspnea and a sense of pressure in the chest on effort. He had a little palpitation, but no pain or orthopnea. His appetite was fair until three days before entry, when he experienced some eructation and some diarrhea, with cramps. There were no other gastrointestinal symptoms.

The family history was irrelevant. The patient had been admitted to the hospital two and a half years earlier because of a tender mass beneath the left nipple. A simple mastectomy was performed, a biopsy showing chronic cystic mastitis. At that time, examination of the blood showed a red-cell count of 2,600,000 with 65 per cent hemoglobin. Since this admission, the patient had lost about 30 pounds in weight.

On examination, the patient appeared pale and emaciated. His tongue was neither smooth nor red. The fingernails were flat, with longitudinal ridges. The veins over the costal margins and upper thorax appeared quite prominent. The

lungs were normal. The heart was of normal size, with a faint systolic murmur at both base and apex. The abdomen was normal, except for bilateral inguinal hernias. Vibration sense and position sense were present, but diminished in the feet.

The temperature, pulse and respirations were normal. The blood pressure was 145 systolic, 80 diastolic.

Examination of the blood showed a white-cell count of 4400 with 36% polymorphonuclears and 64 per cent lymphocytes, and a red-cell count of 1,910,000 with 45 per cent hemoglobin and a color index of 1.28. The cell volume was 20.7 per cent, with a volume index of 1.28. The red cells showed macrocytosis; there was a reticulocytosis of 0.6 per cent. The blood Hinton reaction was negative. The TakataAra and formolgel reactions were negative. The serum protein was 5.8 gm. per 100 cc. The van den Bergh reaction was normal. The bromsulfalein test showed normal excretion of dye.

Examination of the urine at admission showed a one plus test for albumin, and 200 red blood cells per high-power field in the sediment. A few colonies of Staphylococcus albus were obtained on culture; four subsequent studies of the urine showed 17 to 25, 10 to 15, 0 and 0 red blood cells, respectively. Examination of the stools was negative. Examination of the stomach contents showed no free acid after histamine.

Roentgenographic examination of the esophagus, stomach and duodenum was negative. An intravenous pyelogram showed good excretion of dye and normal pelves, but the calyxes were obscured by intestinal shadows.

The patient was treated with six successive experimental liver extract fractions over a period of three months, with only minimal improvement in the blood picture. There was some relief of the weakness, however. At discharge, examination of the blood showed a red-cell count of 2,940,000 with 71 per cent hemoglobin, 33.6 per cent cell volume and 1.8 per cent reticulocytes.

Final admission (one and a half years later): The patient was followed in the out-patient department and was given the usual course of intramuscular treatment with a standard commercial liver extract. Roentgenologic examination of the upper gastrointestinal tract was negative on two occasions. The red-cell count ranged between 3,000,000 and 4,400,000, until a few months before re-entry, when it slowly fell to 2,400,000 despite maintenance of regular liver extract. One week before re-entry, the patient became quite weak and drowsy, and yet was unable to sleep. He also developed increasing dyspnea on exertion, anorexia and nausea, and complained of a "brown taste" in his mouth.

On re-examination, he appeared pale, but well nourished. There was frequent stuttering, and nervous twitching. The lungs seemed emphysematous, with fine inspiratory rales at the right base posteriorly. The heart was of normal size, with a loud systolic murmur over the precordium. The veins over the upper thorax were dilated. There was pitting edema of the legs. The abdomen appeared as before. The reflexes were hyperactive, with a questionable Chvostek sign. Vibration sense was slightly diminished in the lower extremities.

The temperature was 98 degrees F., the pulse 75, and the respirations 25. The blood pressure was 190 systolic, 90 diastolic.

Examination of the blood showed a white-cell count of 9200 with 67 per cent polymorphonuclears, and a red-cell count of 2,940,000 with 8 gm. hemoglobin, 28 per cent cell volume, a color index of 0.78, 0 per cent reticulocytes, and numerous macrocytes. The nonprotein nitrogen was 138 mg. per 100 cc.

Examination of the urine showed a four plus test for albumin and a sediment with 10 red cells, 2 or 3 white cells and a few finely granular casts per high-power field.

A roentgenogram of the chest showed a picture consistent with pulmonary edema on the right side.

The patient received supportive treatment, but failed rapidly. On the third hospital day, the temperature rose to 101 degrees F., the pulse to 102 and the respirations to 35. The patient expired, apparently in uremia.

DR. JAMES FILLMORE

At the outset of this week's discussion I was inclined to believe this seventy-six year old man had pernicious anemia for which he was treated intermittently over a period of three years. However, there was, no doubt a considerable question concerning the diagnosis. He had repeated studies including x-ray studies of the G.I. tract. He was given six "therapeutic trials" which suggested doubt in the minds of those attending this patient during his entire period of observation. It seemed the most likely diag-

nosis was pernicious anemia and it was so strongly thought to be such that these six successive experimental liver extract fractions were given over a period of three months. I suppose this means therapeutic tests for pernicious anemia. I believe that it would be well to review what the therapeutic tests entail. Some patients, in the early stage of the disorder, fail to present all of the usual manifestations of pernicious anemia and since it is of the most importance to initiate treatment early in order to prevent, in a doubtful case, the development of irreparable damage to the nervous system, a therapeutic test is done. In this case the common procedure is to examine the blood daily for three or four days paying particular attention to the number of reticulocytes. If these remain at a relatively constant level fifty USP units of injectable liver extract or fifty micrograms of vitamin B-12 are administered on the fourth or fifth day in a single intramuscular injection or ten USP units of liver extract or ten micrograms of Vitamin B-12 may be injected daily for five days as an alternative procedure. The reticulocytes are carefully enumerated daily and complete blood values obtained every other day for a period of ten days. Barring complications such as azotemia of a severe degree or marked febrile sepsis, patients with true pernicious anemia whose initial red blood cell level is 3.5 million or lower will show a characteristic reticulocyte and red blood cell response. The reticulocytes begin to rise between 48 and 96 hours after the initiation of treatment. They reach a peak on the fifth to tenth day and then subside slowly to a low level during the second or third week. At the height of the reticulocyte response the red cells and hemoglobin commence to rise and continue to do so steadily until normal values are established. The rate of rise of the red cells and the hemoglobin is dependent on the initial red cell values. The absence of a characteristic response of the reticulocytes and red cells in an anemic patient is almost certain evidence barring the complications mentioned above that the patient does not have pernicious anemia. It is of course of paramount importance that no other form of treatment for anemia be administered while the therapeutic trials of liver extract is under way. Our patient was given six successive experimental liver extract fractions in a three months period at the end of which time there was a total red count of 2,900,000 with 71 per cent hemoglobin and 1.8 per cent reticulocytes. The normal value for reticulocytes ranges from .5 to 1.5 per cent. It is apparent that this patient failed to respond to a therapeutic test, as it was repeated, as stated, six different times. I feel that this is the first valuable point against this man's having pernicious anemia. Another point which I believe is against pernicious anemia is the failure of this man over his period of observation to have shown progressive neurological changes as I would expect in a patient who did not respond, as far as his anemia was concerned, to adequate therapy. The vibration sense and position sense, on this man's first admission, were present but diminished in the feet and now three years later it is reported that the vibration sense was only slightly diminished in the lower extremities. I would expect the neurological symptoms to become more exaggerated and progressive than is shown in this case if this were a case of pernicious anemia which had simply failed to respond to medical therapy. By this time I would think there should be more weakness, numbness and tingling in the extremities, difficulty in walking and disturbances in co-ordination and gait. The usual physical signs in order of frequency are impaired vibratory sensation, ataxia, a positive Romberg sign, disturbed position sense, plantar extensor response, spasticity, diminished reflexes, increased reflexes, disturbed cutaneous instability and sphincter disturbances. The majority of these were not complained of by our patient. The report of the stomach content on the patient's first admission showed no free acid after histamine; however there was no further report made during his second and third admissions to the hospital. Gastric anacidity is demonstrable in at least 99 per cent of the patients with the classical pernicious anemia. It has been maintained that the presence of free hydrochloric acid in the gastric secretion is clear evidence against the diagnosis of pernicious anemia, but there are other conditions in which anacidity is not uncommonly seen. About three per cent of perfectly healthy adults have no free hydrochloric acid in their contents, apparently as a normal idiosyncrasy. Carcinoma of the stomach and pernicious anemia are the two common diseases in which free hydrochloric acid is not found but in cases of cachexia of any kind, cirrhosis of the liver or heart diseases with failing compensation there may also be an absence of hydrochloric

acid. I think that a single report of absence of hydrochloric acid should be interpreted with some care (and not all in the favor of pernicious anemia). The absence of glossitis is still another point against pernicious anemia. It was reported that our patient's tongue was neither smooth nor red and no mention was made of any complaint to that effect by this man.

I should say with the absence of glossitis, or other significant gastrointestinal symptoms and the absence of neural manifestations involving the posterior or lateral columns—a macrocytic anemia which did not respond to anti pernicious anemia treatment it is possible this man did not have pernicious anemia.

Now after taking most of my time tearing down the evident diagnosis what could this man have had?

There is one quite rare problem which I would like to mention briefly, because of the mention in the case history of the finger nails which were flat—with longitudinal ridges—in this patient who had a macrocytic anemia and an ill defined gastrointestinal complaint of anorexia and nausea and of a "brown taste" in his mouth. I would like to suggest a possible Plummer-Vinson Syndrome (dysphagia; hypochromic anemia, glossitis, anacidity, splenomegaly as may be the case in any long standing anemia, and changes in the finger nails). However, the majority of these cases show remissions to proper nutrition and iron therapy.

Another interesting laboratory report is that of the urine. On his second admission at the age of seventy-five he had 1 plus albumin, 200 RBC per high power field and a culture of staph. albus. Two later urine reports revealed RBC of a lesser amount in the urine. The final urinalysis on his admission showed a 4 plus albumin with few RBC and WBC and a few granular casts per high power field. It is likely this patient had at least microscopic amounts of blood in the urine from his first reported urinalysis to this last admission. His blood pressure at the time of his first admission was 145/80 and at the time of his last admission the blood pressure was recorded as 190/90.

One may hesitate to make a diagnosis of chronic glomerulonephritis with such a scanty urine study and without a single report of specific gravity. However, the continued albuminuria, 4 plus on last admission, the varying degrees of microscopic hematuria, and the pitting edema of the legs along with the hypertension makes a diagnosis of glomeruulonephritis a good possibility. As was stated earlier, in spite of treatment for his anemia, he developed a terminal blood picture of 2.94 million RBC, 8 gm. hemoflobin with a color index of 0.78 and many macrocytes. This blood picture is now one of hypochromic anemia and the usual for hemoglobin formation, which in this case was probably due to a chronic hematuria which we know he had as far back as three years before his death.

The terminal event in this old German-American store keeper was the development of a uremia which I should say was the cause of death.

MY DIAGNOSIS

1. Uremia.
2. Chronic Glomerulonephritis with iron deficiency anemia from chronic blood loss.
3. Pernicious anemia?

W. WARNER WATKINS, M.D.:

This case record has some conflicting statements which need to be reconciled. Chronologically, the history starts two and a half years back when this septuagenarian had a tumor of the left breast removed. Biopsy had indicated this to be a chronic cystic mastitis, but we have no information about the final pathological report. However, we must take the facts as presented and assume that this was a benign condition and not significantly related to the subsequent developments. A blood examination, presumably made in connection with his hospitalization, showed 2,600,000 red cells and 65% hemoglobin, giving a color index of 1.25. The failure to follow up this finding is what makes me think this was a routine entrance examination to a hospital, because the doctors in charge of patients usually pay too little attention to these. At all events the surgeon was so engrossed in removing this old man's breast, where biopsy had disclosed a benign lesion which one x-ray treatment probably would have cured, that he completely overlooked the much more serious blood disease which the routine hospital examination had uncovered. This is probably as good a place as any to indicate what should have been the further procedure at this point. Faced with the disclosure of such an anemia, a complete blood survey is called for, and the minimum requirements of this would include the following six laboratory examinations:—

1. Red cell count,—which they already had secured.

2. Hemoglobin determination, which had been done,—and calculation of color index, which I have done for them.

3. White cell count.

4. Study of stained smears, for (a) differential count of white cells, (b) observation of size, shape and color condition of red cells, (c) reticulocyte count.

5. Hematocrit reading of cell volume.

6. Calculation of cell volume index.

A more thorough study would add,—

7. Platelet count.

8. Icterus index.

9. Determination of diameter of red cells.

10 Coagulation and bleeding times.

Other tests would be required in differential diagnosis, such as the blood chemical factors, liver function tests, and so forth. However, the first six mentioned would be immediately demanded by this first blood count,—to classify the anemia.

But they neglected the old man and during the next two years, while he was enjoying this good health he was said to have been in, he lost thirty pounds, got paler and weaker, finally reaching the stage of dyspnea, which brought him to the hospital a second time. Now they gave plenty of attention to his blood picture. The facts enumerated would seem to warrant a deductive analysis of what seems to be an obvious blood condition, rather than the usual inductive accumulation of facts, until we have enough for a diagnostic conclusion. Deductive reasoning can be a risky approach to a diagnosis, too much resembling Dr. Willard Smith's "diagnosis by hunch," or the feminine approach by way of intuition. However, some cases are susceptible to that technic, and this seems to be one of them. In deductive analysis, we start with a provisional diagnosis which included several criteria or characteristics. The basis from which we start in this case is a provisional diagnosis of Addisonian Pernicious Anemia. What justification do we have for starting with this provisional diagnosis and proceeding deductively?

Some sheets have been supplied, showing several different approaches to the problem of classifying the anemias. You are asked to refer to them because my time will not permit reading them, but only to call attention to two or three pertinent points.

Note the terms used in the classifications based on the number of red cells, their size and hemoglobin content. Note that there are twenty seven possible combinations of blood pictures. However, the usual classifications are based on cell size and cell content of hemoglobin, giving six possible combinations, as shown on these separate sheets. Of these six possible classifications, the only one which corresponds to the blood picture of our patient is the one numbered III under Haden's Classification viz., Macrocytic and Hyperchromic. Then, in the "Classification Based on Size of Red Cell and Cell Content of Hemoglobin," as used by Wintrobe and others, the diseases which are associated with Macrocytic Hyperchromic blood picture are listed. Out of that list of fifteen, three only seem to warrant consideration. These are diffuse liver disease, and cancer of stomach or intestine, in addition to pernicious anemia. Diffuse liver disease was in the minds of the doctors studying this patient, because they performed several liver function tests, all of which gave normal or negative results. They were also carefully looking for possible stomach or bowel cancer, with three x-ray examinations, all of which were negative. This leaves us with pernicious anemia as the only possible condition, on the basis of facts given, associated with a macrocytic hyperchromic anemia. That certainly justifies a deductive analysis of the symptoms and laboratory findings, on the basis of this presumptive diagnosis.

The basic characteristics of pernicious anemia into which we must fit the facts disclosed by history, physical examination and laboratory findings,—are the following:—

Pernicious anemia is a chronic anemia characterized by five groups of abnormalities.

1. There is abnormal blood formation associated with (a) Reduction in red cells. Our patient has low red counts consistent for pernicious anemia. (b) A reduction in hemoglobin but to a lesser degree than the red cells, giving a color index above 1. Our patient had this, his color index being 1.28 according to the record, though I figured it 1.18. (c) A reduced cell volume. Our patient's cell volume was 20.7, as compared with a normal of 45. (d) An increased cell volume index. Our patient's index is stated to be 1.28, I figured it 1.3,—as com-

pared with a normal of 1. (e) Macrocytosis and hyperchromia of red cells. Our patient has both. (f) Leukopenia at the expense of the polymorphs. Our patients white count is 4400 with only 36% polymorphs. (g) A low reticulocyte percentage. Our patient's count was 0.6%, as compared with a normal of from 0.5 to 1.0,—or at the low limit of normal.

As result of these blood changes, a patient with pernicious anemia develops pallor, weakness and shortness of breath,—all of which our patient had.

2. There are gastro-intestinal disturbances in pernicious anemia,—chief among which are glossitis and achlorhydria. Our patient had absent HCl, but not the glossitis. However, this latter symptom is not essential for a diagnosis of pernicious anemia, while achlorhydria is.

3. Nervous system involvement manifested by tingling sensations in the extremities, loss of vibratory sense and lack of coordination. Our patient's vibratory perception and sense of position were diminished in the feet.

4. Degenerative changes in liver and kidneys frequently accompany pernicious anemia, but may be late developments. In our patient, the liver tests were normal, but there were urinary abnormalities suggesting nephritis, terminating in uremia.

5. Response to liver medication should be definite in pernicious anemia. Our patient responded, but the blood improvement is said to have been minimal. The figures given are for tests made at the end of three months' medication, and may not reflect the therapeutic test improvement which should be looked for earlier, even as early as two weeks after starting specific medication. The reticulocyte percentage should go up to at least 10%, and it reached only 1.8%, or if it did go up earlier and dropped back to 1.8, we do not know this. He is said to have gotten stronger under treatment until the final episodes.

All the later facts in this case suggest the development of liver or kidney disease or both, clouding the blood picture in the final examinations,—toward the type associated with nephritis and uremia. We do not have enough data to differentiate between liver disease and kidney disease in the final days of life, but the evidence points to kidney rather than liver. A completely dark horse in this whole situation would be some such condition as myeloma which is among the fifteen diseases associated with macrocytic hyperchromic anemia. We have no other suggestion of myeloma anywhere, and cannot give it serious consideration on the basis of facts presented.

Therefore, whatever data we study in our deductive analysis, we find consistence and confirmation of the presumptive diagnosis of pernicious anemia. Should this prove not to be the case, it will be against all reason, all clinical evidence, all laboratory evidence, and anything else will be a pathological curiosity which should not militate against the soundness of any reasoning, nor even the accuracy of my diagnosis.

Diagnosis: Pernicious anemia. Nephrosis & Uremia.

## DIFFERENTIAL DIAGNOSIS

Dr. Wyman Richardson: If there were any surgical brethren here, I should have asked them if it is customary to discharge patients with severe anemia without doing anything about it. I do not see anyone here to ask about that problem. Certainly, a man with a red-cell count of 2,600,000 requires a little thought concerning the cause of that anemia.

I might add that the mean cell volume figures out at 108 cubic microns, macrocytic by measurement and macrocytic by observations, as it says in the next sentence, "The red cells showed macrocytosis."

There is nothing in the story of the first admission to suggest any diagnosis but pernicious anemia. The original symptoms, those of weakness, dyspnea and a sense of pressure in the chest, could well have been due to anemia alone, although we must remember that they could also have been caused by some degree of coronary disease or coronary occlusion.

The physical examination is perfectly consistent with a diagnosis of pernicious anemia, although there is nothing particularly corroborative about it. The flat fingernails with longitudinal ridges may not be of significance. They may indicate a nutritional deficiency in a rather elderly man. The fact that the vibration sense was present does not rule out the diagnosis of pernicious anemia. Diminished vibration sense in elderly people is of no diagnostic significance. In fact, it is difficult to use the vibration sense as a criterion of disease in such patients. The blood picture shows a macrocytic anemia, although not very highly macrocytic by count, if

the counts are correct. The color index is high, higher than the mean cell volume indicates, and suggests that one of these two figures is incorrect. I think we can take it that the patient had a macrocytic anemia.

In an attempt to explain the urinary findings, an x-ray examination with intravenous pyelogram done.

I am assuming that this patient had pernicious anemia, in addition to something involving the genitourinary tract that resulted in hematuria.

Have we any of the x-ray films?

Dr. Tracy B. Mallory: Yes; we have a film, but no radiologist is here to interpret it.

Dr. Richardson: I must confess that I cannot make much out of it. I can see filling on one side but not on the other I shall not say anything more about it, but hope that one of the experts will be here before I have finished.

Another thing in the record that I think it fair to ask for and discuss is the specific gravities of the urine on the occasions when it was examined.

Dr. J. H. Means: I find one specific gravity of 1.022 on the first admission and at the second admission, it ranged from 1.020 to 1.022.

Dr. Richardson: It is of some importance and some interest that the specific gravity was 1.022 at the first admission.

The question of the diagnosis of pernicious anemia depends somewhat on the terminology. If one accepts as a criterion for the diagnosis the fact that anemia is subsequently relieved by liver extract, one has a rather broad group of cases that can be called pernicious anemia. The diagnosis of pernicious anemia may be limited to a group that is due purely to some possibly congenital defect of the gastric mucosa resulting in a deficient secretion of gastric juice—so-called "idiopathic" or 'agnogenic" Addisonian pernicious anemia. Furthermore, one must consider a characteristic group of pernicious-anemia like cases relieved by liver extract that are due to secondary disease elsewhere. As we go on in this case, however, if we assume that it is pernicious anemia, there is nothing to suggest any underlying disease that might produce pernicious anemia in a secondary manner.

"The patient was followed in the Out Patient Department and was given the usual course of intramuscular treatment." The usual course of intramuscular treatment was not the correct one. If the total red-cell count could not be maintained at a level of 5,000,000, he should have had an unusual course of treatment involving much large amounts of liver. Nevertheless, there was an apparent definite response, which suuggests that the diagnosis of pernicious anemia may well have been correct.

"The veins over the costal margins and upper thorax appeared quite prominent." I think that is a red herring and I shall say no more about it.

On the second entry, the quality of the anemia changed from a definitely macrocytic to a probably microcytic one, and also probably slightly hypochromic. This man had pernicious anemia, and was thoroughly treated. It is a fairly safe diagnosis for me to make because I di not believe that Dr. Mallory can check me up on it. If the patient had pernicious anemia that was not thoroughly treated, he can check me on it, but I do not see how I can lose either way. If he says that the anemia was due to some other disease, I shall counter that by saying that the change in the anemia may have been due to some other disease.

I want to mention the cystic mastitis and raise the question whether the patient had carcinoma of the breast, with widespread metastases and some involvement of the urinary tract. That seems a wild guess to make. There is no suggestion of bone-marrow replacement from the appearance of the smear, by x-ray study or by symptoms. The first thing I considered as a cause of the urinary findings and uremia was urinary obstruction. Did the patient have an enlarged prostate, with simple retention and uremia from retention? The rectal examination, I assume, was negative, and there was no evidence of bladder enlargement; it seems unlikely that that could have been the cause of the anemia. With pernicious anemia, one must think, of course, of cord bladder, but there is no suggestion of cord involvement and I think we should rule that out. If there was obstruction, it must have been ureteral and due to tumor. That seems a rather farfetched idea to me. The commonest cause of recurring hematuria in an elderly patient with fairly normal specific gravity is some vascular disturbance in the kidney, either repeated embolus to the kidney or nephrosclerosis of the kidney. What seems to me most probable is that this patient had rather marked generalized arteriosclerosis, which involved the kidneys more than other

organs, and that the renal findings were due to a form of nephrosclerosis. It also seems probable that there was involvement of the coronary vessels, but not very marked.

One other possibility is that this patient developed pericarditis. Frequently, Dr. Mallory finds acute pericarditis that has not been suspected by the clinicians The facts that this man's temperature rose rapidly and that he died so quickly suggest that there may have been something superimposed, and one could bring up the question of pericarditis. I see nothing to suggest it definitely.

I have left out one disease that one should always think of in the presence of anemia and uremia—plasma-cell myeloma. I considered this very strongly, but the urinary findings do not seem consistent with nephrosis. They were not those of the plugged-tubule type of renal failure, since there was too much hematuria. Also, the type of anemia was not that usually seen with bone-marrow encroachment by neoplasm in that there was not enough evidence of immature red cells or of active bone-marrow regeneration, so that I rule out myeloma on these two counts.

That leaves me with the diagnosis of pernicious anemia, which was probably not a factor in the patient's death, and generalized arteriosclerosis, more marked in the kidneys, and resulting in nephrosclerosis, uremia and death.

Dr. Jacob Lerman: I wondered about the unilateral pulmonary edema, and wondered whether I should have dismissed the question that this breast condition was a carcinoma after all.

May I see the x-ray film again? I did not visualize any picture such as that. It makes me feel badly.

Dr. Mallory: Dr. Richard Schatzki and Dr. A. Thornton Scott, a couple of years ago, noted focal pulmonary edema quite similar to this in a number of patients with nephritis and usually with uremia

Dr. Alfred Kranes: Dr. M. C. Sussman has also collected an interesting group of cases of unilateral edema and of one-lobe pulmonary edema in heart failure; these cases presented the most striking pictures that I have seen

Dr. Richardson: One of my rules is not to change my mind at the last moment. I am not going to now.

Dr. Mallory: Dr Means, have you anything to add?

Dr. Means: We made clinically about the same diagnosis that Dr. Richardson did. I think there is no more to be said about that.

I am interested in the x-ray picture. I was thinking of Dr. Schatzki and Dr. Scott's observations and also the demonstration that Dr. Frank Fremont-Smith made a number of years ago that edema in general is closely related to body position. It would be interesting to take pictures of such patients, having them lie for a while first on one side and later on the other to see if the picture changed. It is a new concept to find edema in the middle of the lung field, and it may be because the patients are lying down, and hence this area may be the dependent portion.

Dr. Mallory: I shall disagree with that in a moment.

Dr. Lerman: This patient had a hematuria of 200 red cells in the first sediment. That seems to be a good deal for mere vascular disease of the kidney. I am rather inclined to some malignant process in the bladder or in the kidney itself.

Dr. Richardson: I think that hematuria occurs either with embolism or with vascular disease. I certainly have seen it.

## CLINICAL DIAGNOSIS

Pernicious anemia.
Uremia.
Pulmonary edema.

## DR. RICHARDSON'S DIAGNOSIS

Pernicious anemia.
Nephrosclerosis, with uremia

## ANATOMICAL DIAGNOSIS

Subacute glomerulonephritis.
(Pernicious anemia.)
Focal pulmonary hemorrhage.
Bronchiectasis, right middle lobe.
Arteriosclerosis, moderate, aortic an dcoronary.
Hypertrophy of the heart.
Operative scar; left mastectomy.
Inguinal hernias, bilateral.

## PATHOLOGICAL DISCUSSION

Dr. Mallory: The autopsy showed primary disease of the kidneys, which weighed 275 gm. and were rather pale. The surfaces were still fairly smooth, with beginning granulation. The microscopic examination showed a subacute or very early chronic glomerulonephritis. How long the patient had it, it would be difficult to estimate on histologic grounds alone; I should think that it was not over a period of two years. It

developed some time between the mastectomy and either the first or the second subsequent admission. Whether he had it at the first reenry, I cannot be sure.

The heart was slightly hypertrophied. The coronary arteries showed atheroma, but no point of occlusion. The lungs showed focal bronchiectasis and also a lesion that we have seen a number of times in nephritis and to my eye is indistinguishable from what we occasionally see in cases of acute rheumatic fever. It has been described clinically as pulmonary edema, but under the microscope it is predominantly pulmonary hemorrhage. There are almost always foci of organization by connective tissue, which are usually found in the respiratory bronchioles. Many of these cases could be and, I believe, sometimes have been described as bronchiolitis obliterans. It is certainly not pulmonary edema such as one sees in the average cardiac patient. The alveoli are full of red cells; there is a moderate amount of fibrinoid material, usually at the periphery. Usually, there are no leukocytes. To my eye, it is as yet indistinguishable from what has been described as rheumatic pneumonia.

The bone marrow is the only thing that could possibly suubstantiate or deny Dr. Richardson's diagnosis of pernicious anemia. I do not consider it very conclusive. It was rather more hyperplastic than the marrow of chronic nephritis usually is, with a distinctly greater degree of proliferation of the red cells than is seen in the average case of nephritis, not a clearcut picture of pernicious anemia. On the other hand, the alterations from what one ordinarily meets in chronic nephritis were definitely in the direction of pernicious anemia. Consequently, I am inclined to think it did show some effect of that disease as well.

Dr. Means: Are you suggesting that the findings that Dr. Schatzke and Dr. Scott described as edema were not edema?

Dr. Mallory: Yes.

Dr. Means: That is all right then. You can fight that out with Dr. Schatzki and Dr. Scott.

## WARNING!!!

### LAW REQUIRES SEROLOGICAL TEST FOR SYPHILIS

Many states have laws or regulations which require that each physician or midwife who has the responsibility for attending a pregnant woman must submit a sample of the patient's blood to the laboratory to be examined for serologic evidence of syphilis. These wise and beneficial laws or regulations have resulted in the discovery of many cases of unsuspected syphilis. These discoveries, in turn, have led to treatment of the mother and prevention of disease transmission to the child in utero since it is well known that any child born with such an infection is a candidate for mental deficiencies, blindness, physical deformities and premature death.

The State of Arizona has such a law which is very specific and obligatory on the part of the physician. In the Arizona Code 1939, Chapter 68, Public Health, Article 6, Vital Statistics, Section 68-622 Prenatal Examinations, we quote the following:

> "(a) Any physician attending a pregnant woman for conditions relating to her pregnancy shall, *during the period of gestation, or at delivery,* at the time of first examination, take or cause to be taken a sample of the blood of such woman, and shall submit the same to an approved laboratory for a standard serological test for syphilis . . .
>
> "(b) For the purpose of this act 'standard serological test' means a test for syphilis approved by the state board of health, made at a laboratory approved by the board to make such tests. Any laboratory test required by this act shall be made by the state laboratory without charge."

Section 68-623 states:

> "Whenever a birth or stillbirth is reported, the attending physician or other person required to make a report of the birth shall state on the certificate whether a blood test for syphilis was made upon a specimen of blood taken from the woman who bore the child and the approximate date when the specimen was taken."

A review and statistical study of birth records for the past three months (August to November) emphasizes the fact that many physicians either are not cognizant of the regulation or are negligent. This study revealed that over eighty (80) deliveries, attended by fifty (50) physicians, occurred wherein the birth certificate stated that a serological test for syphilis was not done.

During 1950 of a total of 18,304 hospital births where it is assumed a doctor was the attendant, 309 or 1.7% of the cases had no serological test.

Of a total of 1188 non-hospital births attended by a physician, 241 or 20% of the cases had no serological test. Thus, one sees that the problem is serious and cannot be overemphasized. It is hoped that by alerting the physician to the seriousness of the problem and the obligation to which he must subscribe, the situation will reverse itself and all physician-attended pregnant women will have a serological test for syphilis as the regulation specifies.

REGULATION FOR PREVENTION OF OPHTHALMIA NEONATORUM

Again, through laxity or just simple ignorance of the statute, a similar situation exists in the procedure for prevention of Ophthalmia Neonatorum. Regulation No. 11 of "Rules and Regulations for the Control of Communicable Diseases of the Arizona State Department of Health" states:

> "For the prevention of gonorrheal ophthalmia, the physician or person attending the birth of a child shall drop two (2) drops of one (1) percent aqueous solution of silver nitrate into the eyes of the baby immediately after birth."

Because of this regulation and its specificity, the Arizona Department of Health must maintain a firm policy which, in turn, becomes obligatory on the physician to accept only silver nitrate as an effective agent, in the prophlaxis of ophthalmia neonatorum. Silver nitrate is an effective, time proven agent; it is safe to use, requires but a single application and, in the wax ampule container, is a very stable agent.

It is pertinent to call to the attention of the profession that in the enactment of laws, rules and regulations concerning public health in the State of Arizona provisions were made for penalties which may be imposed when violations of the law and regulations of health board occur. These penalties may be severe, and, in the case of a physician, may lead to revocation of license to practice his profession.

Copies of "Arizona Public Health Laws" and "Rules and Regulations for the Control of Communicable Diseases" are available at the offices of the State Department of Health. It is highly desirable and urged that the physicians in this state acquaint themselves with this service and request copies of these pamphlets which cover not only the above stated laws and regulations but also others that a physician should familiarize himself with.

Editors Note: The Professional Board of your Association in a meeting held in Phoenix, Arizona, October 21, 1951, following consideration of these matters and in support of the Maternal and Child Health Division of the State Department of Health, directed publication of this article for the enlightenment of the medical profession and members of the Hospital Association, urging strict compliance with these requirements.

## IS THERE A SHORTAGE OF PHYSICIANS?

(A.M.A. pamphlet: "Facts on Medical Education and Doctor Supply in the U. S.)

This is a difficult question to answer flatly, because it depends on one's definition of a shortage, and it must be answered realistically.

For the person who can't locate a physician when he wants one, there is a shortage. For the rural community that needs a physician to replace its aging doctor, and can't attract one, there is a shortage. For the VA hospital that is understaffed, there is a shortage. There will always be a shortage of good doctors, just as there are always too few good physicists, good engineers, good teachers, good presidential material, etc.

BUT DOES THIS MEAN THAT THERE IS AN OVERALL NATIONAL SHORTAGE? Let's look at the facts.

The U. S. today has a higher physician-population ration than any large country.

Only Israel, where the influx of refugee physicians has created an abnormal situation, has a higher ratio.

Physicians' fees have risen only 38% since 1935-39 while the overall cost of living has risen 69%. This would not indicate that medical care is a scarce commodity.

Perhaps the best indication that there is no shortage of physicians is provided by a look at the general health indices of our country for the past half century. Life expectancy, for example, has jumped from 49 years in 1900 to 67 years for men and 69 years for women in 1950. Every other statistical measure of the nation's health shows steady improvement. While physicians obviously are not solely responsible for this record, it is reasonable to assume that such remarkable progress would not have been possible had there been a shortage of the chief deliverers of medical care—the physicians."

# THE Secretary's MESSAGE

## VA REDEFINES RULES ON DOMICILIARY CARE AND INSURANCE RECOVERY:

Veterans Administration regulations, revised to conform with new laws, also redefine procedures for recovering medical care costs from insurance companies and for the first time set a dollar-and-cents standard for determining when a veteran has "no adequate means of support." The new regulations, printed in the Federal Register of November 30, include:

1. When a non-service connected case applies for free domiciliary **(not hospital)** care, claiming "no adequate means of support," an income of **$125 per month** is the cutoff point for a man with no dependents. If income is under that, he is eligible; if above, he is not However, if the patient is contributing **in whole or in part** to the support of a wife, child, mother or father, the $125 limitation does not apply.

> Rules governing **non-service connected admissions to VA hospitals** remain virtually unchanged. The veteran still must affirm he is unable to pay for hospitalization, and VA still may not investigate beyond the statement.

2. VA reaffirms its intention to recover money from obligated third parties for medical care rendered to veterans. This long-standing policy has been enforced with varying success. It is aimed at collecting from health and hospital insurance companies, from union welfare funds, from public and private compensation funds, from legally liable persons (as in accident cases) and from other federal departments.

On this point, the regulation states that veterans "who it believed may be entitled to hospital care or medical or surgical treatment or reimbursement for all or part of the cost, by reason of statutory, contracted or other relationships with third parties . . . will not be furnished hospital treatment without charge . . . to the extent of the amount for which third parties are liable."

The regulations explain in detail how hospital administrators are to proceed to make collections from such third parties.

# Editorial

ARIZONA MEDICINE

*Journal of*

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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.

2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. (See MEDICAL WRITING by Morris Fishbein.)

3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.

4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.

5. Submit manuscript typewritten and double-spaced.

6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.

The Editor is always ready, willing, and happy to help in any way possible.

## YOU ARE THE A. M. A. WHAT DO YOU GET FOR YOUR $25?

Dr. W. W. Bauer, Director of the American Medical Association, Bureau of Health Education, recently addressed the members of the Maricopa County Medical Society. His timely topic, "What Do You Get For Your $25?" I am sure was educational and enlightening. To those of you unable to attend and others out-of-county, effort will be made to relay a brief outline of the substance of his remarks.

When you sent that check to your local medical society, including state dues and, more recently, A.M.A. dues, the thought may flash across your mind—what am I getting out of this? The immediate and obvious answers are that you are getting status as a reputable physician accepted by your professional colleagues plus recognition of your right to mingle with them professionally and participate in their discussions and work with them for common objectives. You are getting a place in a great team of almost 150,000 members dedicated to "the advancement of the science and art of medicine and the betterment of the public health."

The Judicial Council furnishes a court of last resort to decide ethical questions under the general policies laid down by the House of Delegates, thus giving the individual physician the strength inherent in group support for his ethical standards which are often at variance with the ideas of less altruistic individuals.

The evaluation of new drug products thru the Council on Pharmacy and Chemistry is a service which affects every practicing physician. He can make direct use of it by using and encouraging the use of accepted products, but whether he does so or not, the whole level of production and introduction of new drugs is raised by the very existence of the Council and the knowledge among manufacturers that whatever new drug product they offer to the profession will be closely scrutinized and evaluated without fear or favor. In like manner the Council on Foods and Nutrition tends to improve the quality and regulate the claims for foods having medicinal significance, while the Council on Physical Medicine and Rehabilitation performs a similar functon in its field.

The evaluation of medical schools and hospitals through the Council on Medical Education and Hospitals is known to every physician. So is the work of the Bureau of Legal Medicine and Legislation, whose name defines its function and whose reports in the *Journal* and subsequent assembling in volumes of reports and decisions have served physicians for many years.

Well known also is the Council on Scientific Assembly and the closely related Committee on the Scientific Exhibit through which the world's greatest medical meetings are made available to physicians twice a year, once in the form of the Annual Session, and once on a more regional basis through the Clinical Session, held in midwinter. Of course, the *Journal* of the American Medical Association and the nine specialty journals require no introduction to the doctor. When he considers his $25 investment, the *Journal* or his alternate choice of one of the special journals would in itself fully compensate him, considering the prices of other publications and the intrinsic value of his own organizational press. Everything over and above these can be regarded as extra dividends.

As a member of the State Journal Advertising Bureau, your state medical journal gets consultation and sales service on advertising contracts which have made possible large increases in revenue and savings in sales costs, and have opened the pages of state journals to advertising which might otherwise not have been available.

In these days of high and spiraling prices, the A.M.A. must buy materials and services in a rising market. Printing materials and office supplies are increasingly expensive and so are labor and clerical costs and travel. It is necessary in such a situation either to curtail services or to meet the cost by developing increased income. The A.M.A. has nothing to sell to the public and therefore cannot increase commodity prices. Its only source of income is the advertising revenue of its publications and the dues of its members. The Association has taken special pride in its independence of government funds, foundation grants, and other income whose acceptance might impair the complete freedom of the Association to determine its policy and voice its opinions. The profession must pay a price for these privileges because, paradoxically enough, freedom is not without price.

To return to the recital of services which are tendered you with your membership card, may I refer to the Council on Medical Service through whose studies, meetings, and liaison activities great progress has been made in making better medical service available to more people at prices which they can afford through hospital, surgical and medical insurance, the establishment of grievance committees and emergency call services, community health councils, and in many other ways. The medical profession can have no better advantage than public good will accruing from its services to patients, not only in individual practice but through organized medicine. In a similar way, the Council on Industrial Health has not only helped to promote health and safety in industry but has improved relationships among employers, physicians and workers to the mutual benefit of all. So has the Committee on Rural Health, the Committee on Emergency Medical Service in the event of war or disaster, and the Commission on Chronic Illness in which the Association is one of four major participants. Each of these in its own field renders a service to every individual doctor when it serves the people and enhances the value and the prestige of the medical profession as a whole.

The Bureau of Investigation, one of the oldest A.M.A. departments, beginning before the turn of the century as a column in the *Journal* entitled "Propaganda for Reform," continues its unceasing war on quackery and frauds, though its task has been lessened by the heightened activities of the Post Office Department, the Food and Drug Administration and the Federal Trade Commission in these areas. No small measure of this government activity is attributable to the influence of the medical profession. The Bureau of Medical Economic Research has combated another kind of quackery practiced by the distorters of statistics and the misusers of facts and has, in addition, contributed much constructive statistical research, establishing such new concepts as medical service areas supplanting the old county unit system, and pointing out that medical costs have risen less than general living costs and that medical efficiency is not measured by number of doctors but how much and how well doctors can serve their patients; these are but a few of the contributions of this Bureau. It has also established the growing importance of accidents in mortality and morbidity

Hidden away in a corner, although a corner of sizable proportions now, is a little-known department, the Chemical Laboratory, upon which the scientific councils of the Association lean heavily in the evaluation of drugs and foods.

The library of the Association, with its periodical leading and clipping service and the book reviews and abstracts in the *Journal*, is well known to most physicians. This in itself is a service for which commercial organizations col-

lect far greater fees than the $25 which the doctor pays per year for the privilege of calling upon the resources provided by the A.M.A.

Another part of what you get for your $25 is the Washington Office which has maintained in the capital city a dignified, informative channel of contact with our national legislators which they have appreciated increasingly in the few years this office has existed. Much of the information about pending legislation affecting the public health and the practice of medicine would reach the medical profession too late or not at all if it were not for the Washington Office.

In every war situation the medical profession, despite adverse publicity, has always fulfilled its obligations to the nation. At the present time the Council on Emergency Medical Service is performing a patriotic duty in procurement of medical officers for the armed forces and at the same time maintaining adequate service to the civilian population and protecting the legitimate interests of doctors.

In the field of public relations everyone knows the determined educational campaign conducted by the Association to ward off the threat of governmental control in medicine. Much less publicized are the public relations values of the continuing services rendered by the Association. Any and all of the activities already enumerated have inevitable repercussions of a favorable nature upon the public attitude toward the medical profession. Health education is so closely related to public relations that the line of demarcation is often very hazy and only the close cooperation which exists between the Department of Public Relations and the Bureau of Health Education prevents duplication, overlapping, and unwholesome competition. The Public Relations Department handles press and magazine relationships. Network and transcribed radio and television have been assigned to the Bureau of Health Education as well as convention coverage in this field for the Annual and Clinical Sessions. The Public Relations Department sometimes handles radio and television in connection with the meetings held by various bureaus and councils such as the Annual Congress on Medical Education and Licensure, the Congress on Industrial Health, the meetings of the Rural Health Committee, etc. The electrically transcribed health programs of the Association have a very definite accessory value in public relations, covering, as they do, 80 per cent of the nation's heavily populated areas with 11,000 annual broadcasts in which 300 to 600 of the country's AM radio stations participate. So also do the occasional documentary network programs. The Question and Answer correspondence with lay readers extends direct personal service to 15,000 inquirers a year.

Committee work and advisory services extended by many departments to governmental agencies, voluntary health agencies, cooperating professional groups, educators, business men's and women's organizations, labor unions, and religious organizations all have a two-fold value: they give needed help which can come only from medical sources, and they make friends for the medical profession in ways difficult to measure, but no less real for all that.

The phase of committee, conference, and workshop service with which I am most familiar is that rendered by the Bureau of Health Education through our medical and educational consultants in school health work. Meeting with national and state level groups of doctors, educators, and public health workers and through national conferences on physicians and schools, these consultants offer a two-way channel of communication between doctors and educators, locating and smoothing points of friction, interpreting professional viewpoints, and cooperatively integrating interprofessional activities. This work grew out of one of the earliest of the Association's liaison committees, the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association. Through these contacts it has been possible for me to serve twice on a year-book commission of the American Association of School Administrators, the first time in 1940-42, to originate the year-book, "Health in Schools," and the second time, this year and last, to revise that same book. "Health in Schools" is among the most widely distributed and popular publications of the National Education Association. It contains nothing that is not in full accord with accepted medical principles. Its companion volume, "Health Education," first published in 1925 and in its fourth edition in 1948, occupies a similar commanding position. A third volume devoted to school health services as distinguished from health education is in preparation. Pamphlets such as "Suggested School Health Policies," 'Health Ap-

praisal of School Children" and others have been influential in establishing policies and procedures in relation to school health which improved the health of our children without impairing the family doctor relationships which we know to be fundamental to good medical care.

Unique in the public field is TODAY'S HEALTH, the lay magazine sponsored by the medical profession. It has been copied by closely similar publications in England, Germany and Canada; an Australian edition has been proposed; it is the most widely quoted health magazine in the world. It offers a channel for health education and legitimate public relations which is not equaled anywhere because it reaches directly a conservatively estimated two million readers monthly, not counting uncounted and uncountable secondary readers who see it in libraries, in schools, and elsewhere.

This is what you get for your $25—but wait. I should say, this is what you might get for your $25 if you only would. How many times have you traveled to Chicago without visiting A.M.A. headquarters in which you have so heavy an investment of interest and of money? How often have you referred a knotty problem in school health, in medical service, in medical economics or in the numerous scientific fields to the agency established by your representatives and financed by you? Do you put TODAY'S HEALTH to work in your office, in schools, libraries and among your friends? On the basis of roughly twenty-five major activities at or closely related to A.M.A. headquarters they cost you each less than one dollar per year for direct services and for indirect benefits which can hardly be measured or evaluated.

If you don't get $25 worth for your membership check it may be due in part to the fact that you have never fully exercised your membership privileges. The resources are there. They wait only to be tapped.

## FOUR-GROUP COMMISSION TO ACCREDIT HOSPITALS

The American Medical Association, American Hospital Association, American College of Surgeons, and the American College of Physicians (with membership ratio of 6-6-3-3, total 18), will comprise a Joint Commission for the Accreditation of Hospitals in the United States and possibly Canada. Should the Canadian Medical Association participate, it will appoint one representative, and the American Hospital Association one other from the Canadian Hospitals, which would then make a membership of 20. Operations are expected to commence January 1, 1952. The budget has been tentatively set at $70,000, not including costs of hospital inspection services, the responsibility of the individual organizations, to be financed proportionate to constituent organization representation on the Commission. They will formulate standards relating to hospital accreditation, establish the type and scope of inspections to be made under this program, assign responsibility for hospital inspections to the several participating organizations, and award certificates of accreditation to qualified hospitals. A physician experienced in hospital administration is to be appointed as director.

Presently 3,200 hospitals are approved by the American College of Surgeons.

## ANNUAL POSTGRADUATE CONFERENCE IN CLINICAL OPHTHALMOLOGY

"The Stanford University School of Medicine will offer the annual postgraduate conference in Clinical Ophthalmology from March 24 through 28, 1952. The program this year will be devoted to Ophthalmic Surgery. Registration will be open to physicians who limit their practice to the treatment of diseases of the eye or eye, ear, nose and throat. In order to allow free discussion by members of the conference, registration will be limited to thirty physicians.

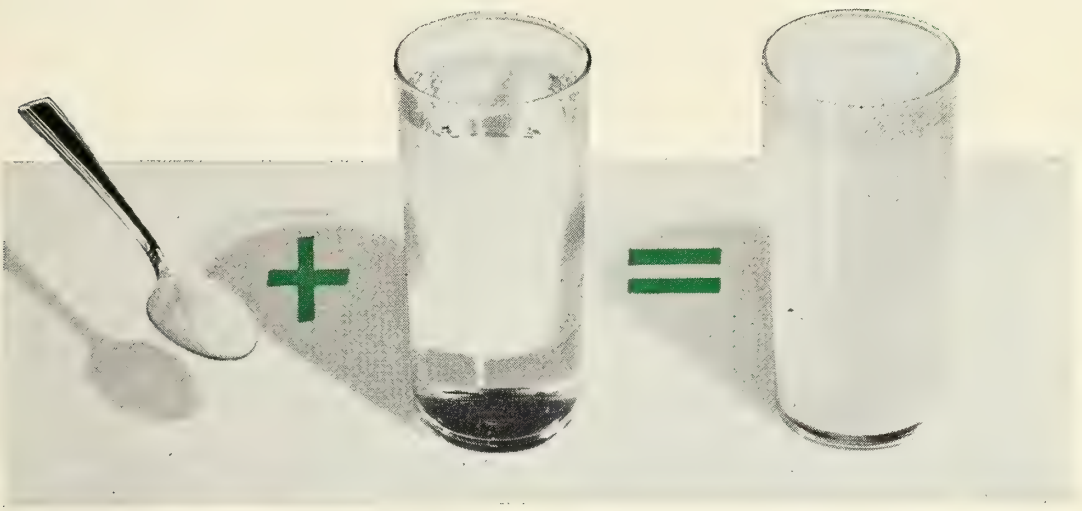
"Instructors will be Dr. A. Edward Maumenee, Dr. Dohrmann K. Pischel, Dr. Jerome W. Bettman, Dr. Max Fine, Dr. Earle H. McBain, and Dr. Arthur J. Jampolsky.

"Programs and further information may be obtained from Office of the Dean, Stanford University School of Medicine, 2398 Sacramento Street, San Francisco 15, California."

W. H. Northway, M.D., Assistant Dean

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**SEARLE** RESEARCH IN THE SERVICE OF MEDICINE

# TOPICS OF *Current Medical* INTEREST

## RX, DX, AND DRS.

By GUILLERMO OSLER, M.D.

Here's a cheer for DR. LEWIS HOWARD, new president-elect of the Western Branch, American Public Health Association. . . . Dr. Howard has been Mr. Public Health in Tucson for most of the modern years. He arrived there in 1924, and became both city and county health officer in 1931. . . . Here's hoping he gets to make inspection trips in all parts of his territory in their best seasons—Honolulu, Vancouver, Banff, Manila, Sun Valley, La Jolla, Carmel, and all other such plague spots.

---

**Two recent articles, quoted in Abbott's "What's New", tell of the ORAL use of PROCAINE FOR CONTROL OF ALLERGIC REACTIONS. . . . Schapiro and Sadove have used it for intractable asthma. . . . Luddecke has used it in conjunction with ascorbid acid for control of allergy from antibiotics, tetanus AT, etc. The dose is 250 mg. of procaine hydrochloride plus 150 mg. of ascorbic acid. There were no side effects in 10 cases, and as much as 2,400 mg. of procaine was given daily. . . . Small series, good promise.**

---

Here is a tip for the Arizona State Hospital for the Insane. . . . Drs. Isbister, Robertson, Stanley, and Stringer describe "A TUBERCULOSIS CONTROL PROGRAM IN A MENTAL INSTITUTION" in the Journal of the Mich. State Med. Soc. . . . They describe the situation in Michigan before an active program was installed,—tuberculosis specialists were not helping; isolation was the method in use; no decrease with this method had occurred in New York. . . . A survey was made in the Michigan State Hospital for the criminally insane (staffed by a superintendent and 3 psychiatrists for 1,100 patients). There were 72 cases of tuberculosis in 1,310 examinations; 41 were active disease. . . . A surgical program was begun, using an imported team of nurses and surgeons, using their own supplies. One of the psychiatrists became their anaesthetist. . . . Bed rest could not be enforced, so that phrenic crushes alone were of little value. Pneumothorax was abandoned as hazardous. Phrenic plus pneumoperitoneum was valuable in 7 cases. Thoracoplasty was regularly effective in 8 cases. Resection and extra-pleural oleothorax were successful in one case apiece. . . . This Osler has urged such active therapy for years, but it is surprising to know that it works in the absence of bed rest, and when the patients throw equipment at the physicians.

---

**Hospital Topics describes a pair of 16mm. color films on ASEPSIS which are now available. The Wilmot Castle Co. will send them to any group of more than 15 people, free of charge. . . . The director and editor was Dr. Carl Walter of Harvard, a leading evangelist for aseptic methods. . . . The films depict preparation of sterile supplies, and disposal of contaminated supplies. The total running time is 26 minutes.**

---

Newspaper editors decide on the relative importance of news items. . . . At first glance one would feel that it is unfair to place on page 5 a few paragraphs with a small heading "Doctor Volunteers Eliminate Draft Need." When the subject was first discussed and the Armed Services needed physicians, this was first-page stuff! . . . On second glance, after saying that "so many doctors and dentists have volunteered that they no longer rely on the draft," they tell the reason why,—Medical men are offered either a bonus and commission for volunteering, or a private's rank on being drafted. The ratio of preference was 5,367 to 2.

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**TIME Magazine mentions the research work of Dr. Joseph Stokes Jr., on VIRUSES. There are two points of interest in the story. . . . Dr. Stokes believes that if production of an active immunity (using a measles virus) is attempted while a transient passive immunity is present (using an immune gamma globulin), the result may be a safe and continued protection. It might occur with other viruses. . . . The second point, not mentioned by TIME, concerns Dr. Stokes himself. In the early 1920s, Dr. Stokes went thru his 4 medical years at Pennsylvania with grades of 100 in all subjects.**

---

There will be quite a stir in the near future about two heart-supportive drugs, BETAINE and GLYCOCYAMINE. The Annals of Western Medicine and Surgery for October 1951 contained the first four papers on use of the substances, with articles by the two Doctors Borsook of Los Angeles and Pasadena, and by Drs. Van Zandt, Graybiel, and Patterson. . . . Their thesis,—Glycocyamine, with the help of betaine, is the precursor of creatine. Phospho-creatine is the main reservoir of readily available energy for muscle and nerve cells. When such cells are poorly functioning, even after anatomic enlargement to meet strain, excess of certain nutritives may be valuable. . . . Their proof,—several series of decompensated cardiacs who responded by symptoms and signs with better function and return of compensation. . . . The work was done under the auspices of Cal. Tech., by a grant from the International Minerals and Chemical Corporation,

and by a contract with the Office of Naval Research. . . . Non-medical publicity has already started to appear.

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**The J.A.M.A. for May fifth had articles on two modern and topical subjects. An abstract of the piece about FROZEN FOODS would include the suggestions that, if the foods are frozen soon and rapidly, the vitamins and proteins will not be injured. . . . AVIATION MEDICINE presents numerous problems, only partly solved. The physical factors which can provide hazards to the human in flight include speed, heat, cold, sudden changes, position, vision, air pressure, body gases, etc.**

---

California has taken a radical step in ISOLATION OF THE TUBERCULOUS. . . . This column recently mentioned Cal's compulsory hospitalization law. Now comes the report of a 20-bed hospital unit for UNRULY PATIENTS at Terminal Island, off San Pedro, near Los Angeles. It was authorized by the 1949 legislature. . . . The patients are those "who repeatedly refuse to accept treatment elsewhere and whose actions make their disease a hazard to the community." . . . A person doesn't have the right to spread disease as he wishes. . . . Actually these patients are irresponsible, often nearly psychopathic, frequently alcoholics, and sometimes are streptomycin resistant. . . . The subject is one which the V.A. hasn't cared to handle, but which is a horrible headache to that service.

---

**The Surgeon General's office has reported the RELATIVE MORTALITY RATES of the past three wars,—World War I, 8 per cent; World War II, 4 per cent; Korea War, 2½% per cent. . . . In addition to experience, the use of penicillin, whole blood, forward-area care, and air evacuation facilities are given most of the credit. Cold-weather discipline is also important, since Korea is the coldest country in which our army has ever campaigned.**

---

One can usually tell a new drug by the company it keeps—who announces it, who did the research, where the report appeared, how it is advertised, etc. . . . A NEW SOPORIFIC drug has just been put out (by Schering Corp.), advertised in the usual trade journals (Modern Medicine), mentioned in the drug publications (Western Druggist), and said to be a non-habit forming non-barbiturate composed of carbon, hydrogen, and oxygen! . . . Can you place it? The name is DORMISON (METHYLPARAFYNOL), a name which at least suits our semantic requirements. . . . It could turn out to be a good new drug, or just another preparation aimed at a lush field—depending on a future trial.

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**Unfortunate results from healing crop up as we discover more effective healing agents. The most recent seems to be the ECTOPIC PREGNANCIES which follow the use of penicillin for pelvic inflammatory disease. . . . Dr. Leon Krohn of Los Angeles reports in 'California Medicine' that the incidence of ectopics in his practice has trebled since the advent of the antibiotic. . . . The healed tubes open, but apparently not enough to allow the ovum to descend to the uterus.**

---

The thoughtfulness of Drs. Prigal and Molomut in correlating CHRONIC AND REPEATED INFECTIONS in a family is doubtless matched by the futility of their chore. . . . They presented (in the J.A.M.A.) a clear picture of the susceptible host and the non-vulnerable carrier. The organism frequently was the hemolytic staphlococcus, a hardy bacterium which is often resistant to antibiotics. . . . The futile part of this valuable information is that it will be so seldom used. The sick person is the one who will receive the drugs, and the average doctor will let the subject alone until we all take multiple antibiotics every morning with our vitamin pills.

---

**If a DRUGS MANUFACTURER can have 3 months head start with a new or improved pharmaceutical preparation he is lucky. . . . Lederle's advantage of one year in production of aureomycin was unusual. . . . Competition among drug companies, each of which has an antibiotic specialty, results in round-robin price cuts. . . . The United States is one of the few major countries which permits patenting of a new drug. Most only permit patenting of the process. . . . Pfizer became the world's leading AB producer because it was a specialist in drugs produced by fermentation. . . . Discovery of a commercially valuable AB has cost the lucky manufacturer millions. Squibb, Lilly, Abbott, Upjohn, and Sharp and Dohme have spent many millions and not yet hit the jackpot. . . . One company screened from five to six thousand soil samples a month in search of an outstanding culture. Only 76 out of the 100,000 showed any promise.**

---

SCREENING ANTIBIOTICS has reached a basic pattern, according to Upjohn's 'Oddysey of Modern Drug Research'. The Hektoen Institute at Cook County Hospital, for instance, tries out each organism on twelve bacterial strains, including tubercle bacilli, two molds, and a protozoon. . . . If the drug is active in test tube studies, the tolerance in mice is established. . . . If that test is passed, the AB is given "the works," with more than 200 varieties of organisms. . . . The Great Therapeutic Desideratum at present is a material which will work against viruses.

---

**PULMONARY FIBROSIS may have obscure causes. There were 647 patients in the past 20 years at the Mayo Clinic with a diagnosis of 'pulmonary fibrosis of indeterminate nature.' Fifteen of those known to be dead had been autopsied. . . . The causes were identified in all but one case, and**

**they included such etiologies as bronchiectasis (4), organized pneumonia 2), lymphatic metastatic carcinoma (3), aplastic anemia, mitral stenosis, multiple infarctions focal abscesses, Hodgkin's disease, and Aspergillus infection.**

---

The Shield M'f'g. Co. has presented a new plexiglass RESPIRATOR. There are other chest 'contour' respirators—and a lucky thing for the paralyzed. . . . Ten years ago this Osler tried to make a respirator of rubber and copper, to prevent paradoxical movement of a hemithorax after thoracoplasty. No success, and the attempts were abandoned when the difficulties in the field were described by Dr. Claude ('The Leukemias') Forkner. . . . Dr. Forkner had just returned from a professorship at P.U.M.C. in China. He brought back the famed Fred Snite, who had been his patient there, and he had to invent a chest respirator which would allow for transfers in transportation. . . . He at once encountered other inventors, priorities, patents, etc. The most interesting contact was a Swedish invention, sponsored by a wild Irishman, who was also a manager of Sonja Henie! . . . Inventors meet such interesting people.

## AN ANNOTATED BIBLIOGRAPHY OF GROUP PRACTICE 1927 - 1950

Bulletin 85, revised edition, prepared by the AMA Bureau of Medical Economic Research, defines "Group Practice":

1. There must be at least three physician members.
2. The receipts from medical practice must have been pooled in some manner and then redistributed to members according to some previously arranged plan.
3. "Closed staff" hospitals were not included unless the members of the staff pooled the income received for services outside the hospital.
4. Purely "diagnostic groups" which receive only referred cases were excluded.
5. "Industrial" groups which furnish medical services to a single industry and thus to only a limited group of the general population were omitted.

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## REPORT OF THE DELEGATE HOUSE OF DELEGATES, A.M.A.

Los Angeles, Calif., Dec. 4-7, 1951

A summary of the actions of the House of Delegates in digest form at the Los Angeles Clinical Session will be found in the A.M.A. Journal issue of Dec. 22, 1951, beginning on page 1675. Members of the Association are referred to this issue of the Jornal for complete summary of all the proceedings. The addresses of the President of the A.M.A., the President of the American Hospital Association, the Commander of the American Legion, and the reports of the Coordinating Committee and Board of Trustees are recommended especially for their value in reading. Mr. Newell Stewart, Phoenix, Arizona, was the official representative to the House of Delegates from the American Pharmaceutical Association.

The meetings of the House of Delegates were held at the Biltmore hotel, except for an evening meeting in the auditorium of the Shrine Convention Hall, where an overflowing crowd of doctors, their wives, and the public were addressed, over a national broadcast and television reproduction, by the Honorable U. S. Senators, Robert A. Taft, Ohio, and Harry F. Byrd, Virginia.

These Senators, one a Republican and the other a Democrat, spoke in unmistakable terms about their ideas against Socialism, creeping upon this country under present administration policies, their opposition to compulsory health insurance as advocated by the President, and of their disagreement over many of the President's national and international programs now being sponsored or advocated. These speakers made all of us feel that we had courageous and gallant comrades in our campaign to defend the American way of life, as exemplified in our campaign to preserve our present freedoms in medical practise.

A short summary of a number of resolutions introduced into the House and reported out for adoption by the various reference committees will be recited in this report.

1. The Board of Trustees recommended to the House of Delegates a substitute report for adoption, in place of the previous actions of the House, in its acceptance heretofore of the so called Hess Report, which represented a study of a special committee on "Hospitals and the Practice of Medicine," or "Hospital-Physician Relationships." This new revised report was adopted by the House of Delegates as a policy statement on Physician-Hospital Relations, and surplants the controversial "Hess Report" previously adopted. It can be stated that the philosophy underlying the adoption of this revised statement of policy differs very little from the original "Hess Report," but its language has been altered so that physicians alone are made accountable for any deviations from acceptable ethical practises, in their professional, ethical and financial relationships with hospitals. The threat of disciplinary action against hospitals who do not cooperate with doctors under proper ethical standards, as set forth in previous policies by the original "Hess Report," are entirely eliminated. The present version, as now adopted, in hospital-physician relationships offers the following principles for guidance of individual practitioners and medical societies toward solution of the various local controversies over employment of doctors by hospitals:

(A) A physician should not "dispose of his professional attainments or services" to any hospital or institution under conditions where such services can or are resold—for a profit to the hospital.

(B) If a hospital does not sell the physician's services, the financial arrangement between them may be placed on any mutually satisfactory basis. In such manner, doctors may be paid for teaching or research, not only by hospitals, but by corporations or other lay bodies.

(C) Specialists of anesthesiology, pathology, physical medicine and radiology, the ones chiefly concerned by this AMA policy—are recognized as an integral part of medical practise.

Note: This completely published newly adopted report on the Relation of Physicians and Hospitals will be found in the A.M.A. Journal, issue Dec. 22, 1951, beginning on Page 1684.

2. A resolution was adopted against "the promulgation of any regulations by the Selective Service System under which students of Schools of Chiropractic may be deferred under the Universal Military Training and Service Act of 1951. Earlier in the year an Amendment to the Selective Service Act was added to place chiropractic students on par with medical students with regard to deferment from military duty in order to continue their professional

studies. "It has been scientifically demonstated," said the resolution, "that chiropractic is without merit as a healing art and that there is no current need in he armed forces for graduates of schools offering such instruction."

3. The House approved a report of the A.M.A. Council on Medical Service which outlined plans to assist state medical associations in developing programs designed to bring physicians into communities in need of medical services,—a national expansion of the Physician Placement Service.

4. Approval was given to the Board of Trustees' appointment of the six A.M.A. representatives who will serve on the joint commission for accreditation of hospitals in the United States and Canada, along with representatives of the American Hospital Association, the American College of Surgeons, and the American College of Physicians. The six are: Drs. R. J. Whitacre, East Cleveland, Ohio; Herman G. Weiskotten, Syracuse, N. Y.; Julian P. Price, Florence, S. C.; Dwight H. Murray, Napa, Calif. (Chairman of the Board of Trustees); Gunnar Gundersen; La Crosse, Wisc., and Stanley R. Truman, Oakland, Calif.

5. A resolution was adopted clarifying the action of the House of Delegates which called for a Congressional Investigation into the matter of "Teaching of Collectivism" in our public schools.

6. Adopted a resolution calling for a comprehensive survey by the AMA to determine the source of funds, both public and private, now available for medical research. A Committee of the Board of Trustees will attempt to reveal (a) sources of funds, both public and private, now available; (b) the amount of free time devoted to medical research, and (c) fields of medical research receiving funds and in what proportion. The decision to carry out this study was due in part to the expressed feeling that many past surveys "have concentrated primarily on Government grants, and have ignored, for the most part, contributions of free time by scientists and gifts by private individuals."

7. War Veterans Hospital and Medical Service was again before the House, resolutions presented chiefly by Dr. Shoulders, from the State of Tennessee. Many problems are concerned with this subject, yet the most controversial one pertains to the government's responsibility (if it has one) for the hospitalization and medical care at public expense of non-service connected disabilities. Should these cases continue to be eligible for free hospital and medical care, simply by signing a statement that each cannot pay for these services, or, if not, what should be done to correct this widespread abuse of the taxpayers funds? A counterpart of the same subject would have to provide for some method of caring for non-service disability cases, under private auspices. The plan as introduced by Dr. Shoulders would provide that the Government contract and pay for memberships in the voluntary health service plans to care for these cases who are really unable to pay for their medical services. This subject was debated long before a reference committee. Vice Adm. Joel T. Boone, Chief Medical Director of the Veterans' Administration, being present at the hearing. The House adopted a resolution submitted by the appropriate reference committee, recommending that the Board of Trustees appoint a special committee to study the Shoulders Plan and all other ramifications of veterans' care. The proposed committee was authorized and directed to consult with hospital, insurance, veterans and other interested organizations in arriving at its conclusions. This Committee has a difficult task ahead, since the above issue raised in the Shoulders Plan, will encroach upon the present attitude of the high councils of the American Legion who insist upon the preservation of the status quo in regard to free care of non-service connected disabilities. This Committee will also find another American Legion project closely linked with medical care of veterans, namely, its campaign to prevent the merger of all Federal medical activities, including the VA's and associated hospital activities, under one departmental head.

8. The House took action on matters pertaining to government paid medical services for dependents of military personnel. The text of the approved resolution is as follows: "If, in the independent judgment of Department of Defense or Congress, the welfare of our preparedness program requires that the dependents of members of our armed forces receive medical care on a service basis, then the medical profession stands ready to provide such service thru Blue Shield and other medical society-sponsored plans." This resolution as adopted gives Blue Shield strong recognition by the AMA; it strengthens the position of the American Hos-

pital Association, which took a similar stand at its recent annual meeting, and it may conceivably serve to influence consideration which is now being given by the Department of Defense and Armed Services to the utilization of voluntary prepayment plans in providing health care for dependents. WRMS No. 233.

9. The House went on record in favor of fluoridation of community water supplies as a measure intended to help prevent dental caries, particularly in children.

10. A resolution was adopted authorizing the A.M.A. to make a survey to determine the number of "deaths of small children and infants resulting from the ingestion of household products not labeled as poisoning." Singled out specifically were carbon tetrachloride cleaning fluid, methyl salicylate, and silver polishes containing cyanide. The resolution said "All (of these) tho poisonous, are not labeled as such and new cleaning products and other household preparations are being placed on the market each year, some of which may be poisonous and yet not be so labeled because they do not fall under the Federal Caustic Poisons Act."

11. The following recommendations of the Committee on Blood Banks were approved (1) Publicize contra-indications, as well as indications, for use of whole blood and blood fractions; (2) increasing awareness on part of physicians of necessity of replacing blood taken from banks—" too many physicians fail to discharge their responsibility;" (3) donors should receive blood type cards; (4) strive for better cooperation among organizations interested in the national blood program.

12. The latest revision, the first since 1945, of the "Essentials of an Acceptable Medical School," was submitted by the Council on Medical Education and Hospitals. Their report was approved.

Your Delegate was privileged to attend all the meetings of the House of Delegates, and was designated this Session by the Speaker of the House, to serve on the Reference Committee on Reports of Officers. Our Executive Secretary, Mr. Robert Carpenter, also attended all meetings of the House.

Respectfully submitted.
Jesse D. Hamer, M.D., Delegate
Phoenix, Arizona


**• DOCTOR •**

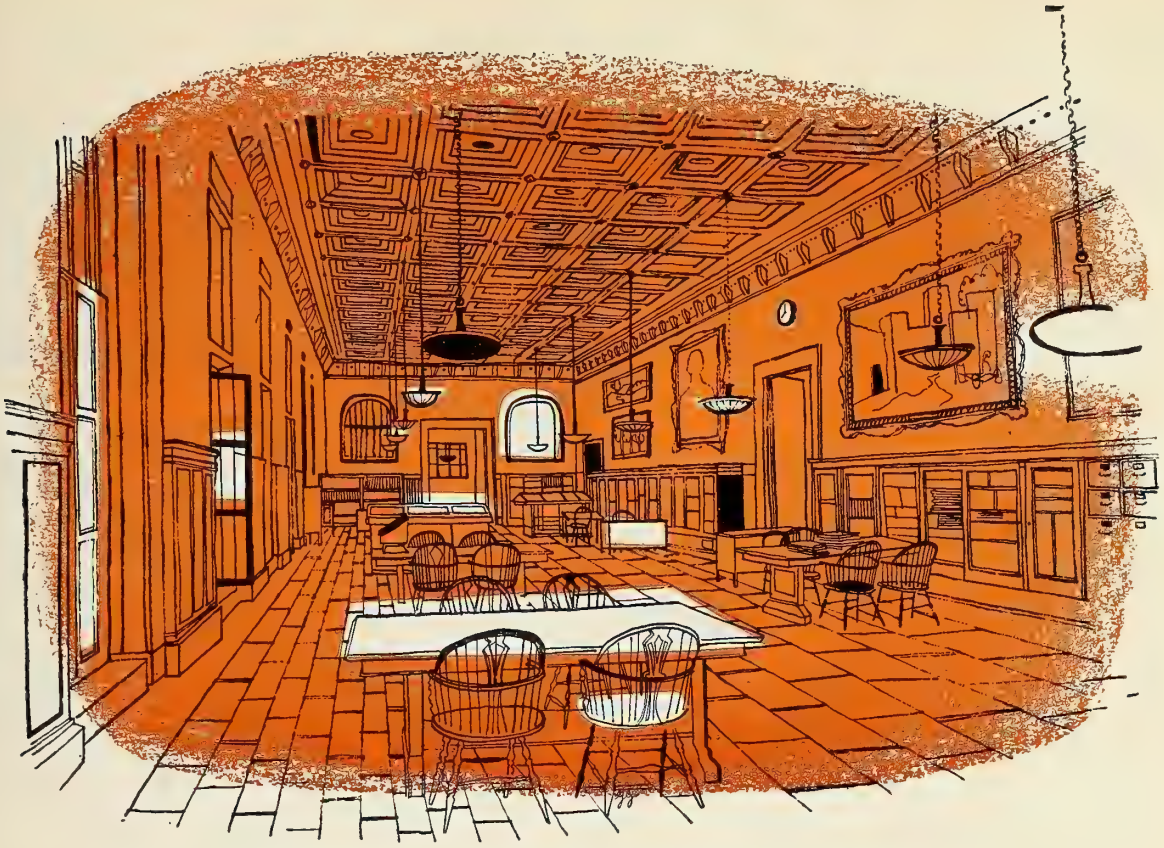
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| Shigella Dysentery | Pericarditis* | Boutonneuse Fever |
| Endocarditis* | Psittacosis | Tick-Bite Fever |
| Erysipelas | Q Fever | Typhus |
| Granuloma Inguinale | Rat-Bite Fever | Tick Typhus |
| | Relapsing Fever | Tularemia |

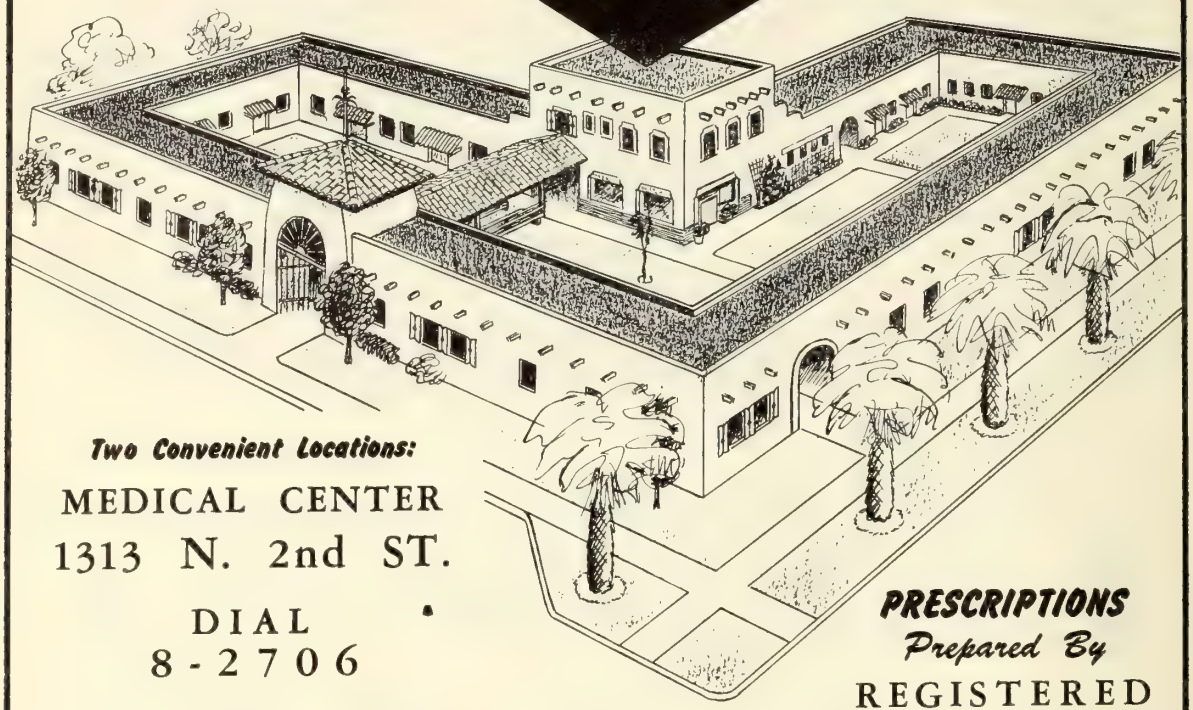
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## CONSTRUCTIVE CHICAGO CONFERENCE

The State Medical Journal Conference for Editors and Business Managers was held in the American Medical Association Building in Chicago, Illinois on November 13 and 14. With an attendance of 180 delegates representing 38 state journals together with the Hawaii Islands. The Arizona delegates were Frank J. Milloy, M.D., Editor, Arizona Medicine and J. N. McMeekin, Business Manager.

Meeting was called to order by George F. Lull, M.D., Secretary and General Manager of the American Medical Association.

A most interesting informative talk on readership analysis in relation to advertising was given by Walter Kehoe, Director Medical Department, J. B. Lippincott Company. While the subject of the speech was listed as "The Job of An Editor," the main point made was that the more interesting the material published the more advertisers would be interested in using the publication.

A Panel Discussion followed and the speakers were, Joseph Garland, M.D., New England Journal of Medicine; Carl B. Drake, M.D., Editor, Minnesota Medicine; Wallace M. Yater, M.D., Editor, Medical Annals of D.C.; Douglas L. Cannon, M.D., Editor, Journal of the Medical Association of Alabama.

A Question and Answer Period followed in which the delegates participated.

Harry L. Shaw, General Editor, Harper & Brothers, spoke on "Literary Aspects of Medical Journalism." 'Writing,' said Mr. Shaw, "when properly managed, is but another name for conversation." Which is but another way of saying that so-called "fine writing" is not nearly so interesting, nor so well and widely read, as the plainest possible way of "talking about" the subject under discussion is a simple conversational manner.

Lester L. Hakes, Associate Professor, University of Wisconsin, went into detail on the "Mechanical Make-Up of the Journals."

The evening session was held at the Walnut Room of the Bismarch Hotel. Julian P. Price, M.D., Editor, Journal of the South Carolina Medical Association was the Toastmaster. The speaker was Wu Paak Shing, Ph.D. who's topic was "The Chinese Under the Communists' Rule."

Three sessions were held Tuesday morning. "Financial Appraisal" was the topic given by Stanley B. Weld, M.D., Chairman, Advisory Committee of the State Journal Advertising Bureau.

Problems of Business Management was an open discussion for the Business Managers.

In the fourth session, on Tuesday, Wm. Alan Richardson, Editor, Medical Economics, engaged in an excellent discussion of the problems of medical journal publication. Mr. Richardson stressed that, if more money was available for staff purposes, a much better job could be done, and inferred that a widening of the advertising field might well supply more money and thus make possible great improvements in these journals.

A talk was given by Alfred J. Jackson, Director, State Journal Advertising Bureau on its Historical Background and a general report on 1951 and predictions for 1952.

The 27 class publications listed in the November 12th issue of 'Advertising Age' indicates an average gain of 4.6% in number of advertising pages for the 10 month period, January through October 1951.

State Journal Advertising Bureau pages for the same period show a gain of 12.5%. Net billing is also up about 12.5%.

Following was a discussion where the sug gestion was made by Mr. Jackson, due to the increased printing costs, in broadening the possibility in National Advertisors by the solicitation of electric appliances and automobile industries. This was met with the general approval of all the delegates.

Also suggested that local firms should be more thoroughly covered in the above mentioned business.

From hearsay, and comments received, it is quite apparent that the program was well received by those present.

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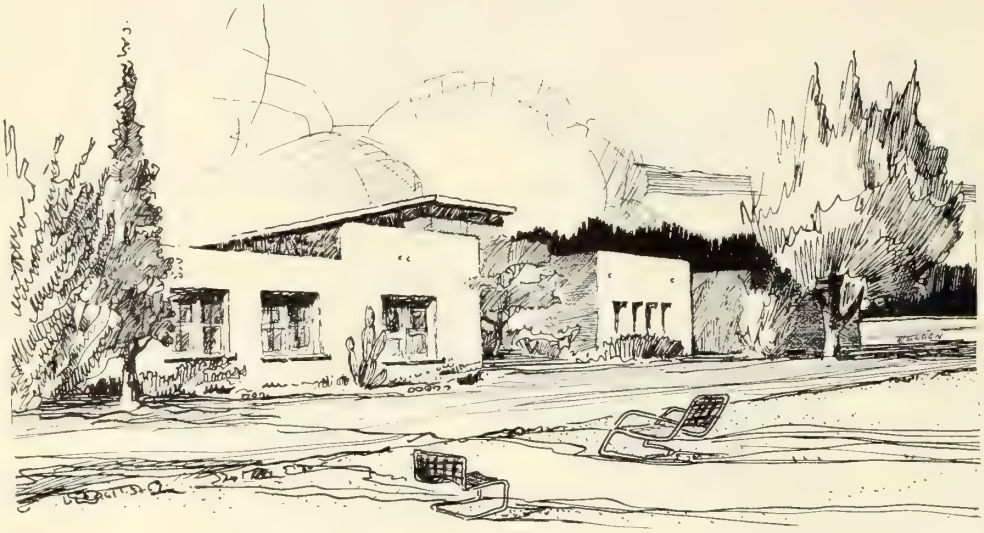
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## IN MEMORIAM



Oscar C. West, M.D.

**Born in Waco, Texas, in the year 1878, Oscar C. West received his Doctor of Medicine degree at the University of Emory, School of Medicine, Georgia in 1899.**

**Licensed to practice medicine in the states of Georgia, Texas, New Mexico and Arizona, he came to Phoenix in 1929 to become state epidemiologist. He served as local assistant county physician and (Maricopa) county medical examiner, appointed in 1941, relinquishing this latter post just two years ago, the result of ill health. Prior to his residency in Arizona, he had served his country in Cuba during the Spanish-American War and in France during World War I; was division surgeon of the Southern Pacific in Texas; public health officer in New Mexico; and likewise saw service in Chile, China and Mexico.**

**Dr. West lived a full life in public service devoted to his profession. He endeared himself in the hearts of many of his wide circle of friends, patients and colleagues. Over twenty years a member of Maricopa County Medical Society and this Association, in 1949 he was honored by fellow-practitioners on having completed his first fifty years of distinguished service in the field of medicine, through honorary membership in its Fifty Year Club.**

**While his recent passing creates a void within our professional ranks difficult of replacement, we can truthfully say: "Well done thou good and faithful servant—."**

## RESOLUTION

*WHEREAS, John Thomas Taylor, one of our most respected colleagues and a former member of this Society has passed into the great beyond; and*

*WHEREAS, throughout all his life he devoted himself to the practice of medicine, overcoming severe physical illness to do so; and*

*WHEREAS, his services and kindness to the sick public have, over the years, given unstintingly, unselfishly and graciously, ofttimes at the expense of his own physical well-being; and*

*WHEREAS, by his good works, his exemplary character and his high ideals, both as a doctor and a citizen he has endeared himself the communities in which he has lived; and*

*WHEREAS, social and professional contact has created complete confidence, trust and friendship by older and younger members of the profession alike; be it therefore*

*RESOLVED, that the Yavapai County Medical Society spread all the foregoing in the minutes of our Society and that a copy of this Resolution be furnished the family of Dr. Taylor with an expression of deep sympathy to them in their loss; and that copies of this Resolution be furnished the local press, the Arizona Medical Association and the American Medical Association.*

For the Society:
Walter V. Edwards, M.D., President
C. E. Yount, Jr., M.D., Acting Secretary

## FACTS ABOUT A.M.A. DUES FOR 1952

1. American Medical Association membership dues for 1952 are $25.00.

2. Fellowship dues for 1952 have been abolished.

3. American Medical Association membership dues are levied on "active" members of the Association. A member of a constituent association who holds the degree of Doctor of Medicine or Bachelor of Medicine and is entitled to exercise the rights of active membership in his constituent association, including the right to vote and hold office as determined by his constituent association, and has paid his American Medical Association dues, subject to the provisions of the By-Laws, is an "active" member of the Association.

4. American Medical Association membership dues are payable through the component county medical society or the constituent state or territorial medical association, depending on the method adopted locally.

5. Commissioned medical officers of the United States Army, the United States Navy, the United States Air Force or the United States Public Health Service, who have been nominated by the Surgeons General of the respective services, and the permanent medical officers of the Veterans Administration and the Indian Service, who have been nominated by their Chief Medical Directors, may become Service Fellows on approval of the Judicial Council. Service Fellows need not be members of the component county or constituent state or territorial associations or the American Medical Association. They do not receive any publication of the American Medical Association except by personal subscription. If a local medical society regulation permits, a Service Fellow may elect to become an active member of a component and constituent association and the American Medical Association, in which case he would pay the same membership dues as any other active member and receive a subscription to the Journal of the American Medical Association.

6. An active member of the American Medical Association may be excused from the payment of American Medical Association membership dues when it is deemed advisable by the Board of Trustees, provided that he is partially or wholly excused from the payment of dues by his component society and constituent association.

The following may be excused in accordance with this provision: (a) members for whom the payment of dues would constitute a financial hardship as determined by their local medical societies; (b) members in actual training but not more than five years after graduation from medical school; (c) members who have retired from active practice; (d) members who have reached the age of 70, on request, and starting January 1 following the 70th birthday, and (e) members who are called to active duty with the armed forces (exemption begins July 1 or January 1 following entrance on active duty). The last two categories are excused from A.M.A. dues regardless of local dues exemptions.

7. Active members of the American Medical Association are not excused from the payment of American Medical Association membership dues by virtue of their classification by their local societies as "honorary" members or because they are excused from the payment of local and state dues. Active members may be excused from the payment of American Medical Association membership dues only under the provision described in Paragraph 6 above.

8. American Medical Association membership dues include subscription to The Journal of the American Medical Association. Active members of the Association who are excused from the payment of dues will not receive The Journal except by personal subscription at the regular subscription rate of $15.00 a year.

9. Members may substitute one of the special journals published by the Association for The Journal to which they are entitled as members.

10. A member of the American Medical Association who joins the Association on or after July 1 will pay membership dues for that year of $12.50 instead of the full $25.00 membership dues.

11. An active member is delinquent if his dues are not paid by June 1 of the year for which dues are prescribed and shall forfeit his active membership in the American Medical Association if he fails to pay the delinquent dues within thirty days after the notice of his delinquency has been mailed by the Secretary of the American Medical Association to his last known address.

12. Members of the American Medical Association who have been dropped from the Mem-

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bership Roll for nonpayment of annual dues cannot be reinstated until such indebtedness has been discharged.

13. The apportionment of delegates from each constituent association shall be one delegate for each thousand (1,000), or fraction thereof, *active members of the American Medical Association* as recorded in the office of the Secretary of the American Medical Association on December 1 of each year.

## ILLINOIS STATE MEDICAL ASSOCIATION

### A LAWYER WHO KNEW MEDICINE

Earl Rogers, probably the most famous criminal lawyer on the West Coast, the attorney who defended Clarence Darrow when he was accused of jury bribery, tried many of his cases, and won them, because of his passion for anatomical and "surgical lore."

Each case he handled brought a more complete realization of the value of such knowledge in his profession. Doubt was frequently cast upon the depth of that knowledge, yet Rogers was made a professor of medical jurisprudence at one of the Los Angeles colleges. Many an expert medical witness ran afoul of Earl Rogers on the stand and was convinced that the lawyer knew as much as any doctor. Gunshot wounds; incised lesions, or stab wounds; all phases of insanity from sheer madness down through the many functional disorders to mere mental defects that cause inclination to perverse actions; the study of psychiatry, or the treatment of those mental diseases; the intricate subject of poisons and narcotics and their effect upon the human organism—all these special branches of medicine which definitely are included in medical jurisprudence, Rogers absorbed with an avidity inspired by ambition to become eventually superior in such knowledge to any medical practitioner. He haunted hospitals, operating rooms, morgues. Wherever a difficult operation was to be performed or a mysteriously slain body examined, Earl Rogers was one of the interested and expert investigators present.

Shortly before his death in 1922 he wrote out an argument to offer his son in his effort to wean him from his determination to study law. It, in its entirety, gives an amazing prophecy on the future of that profession. To quote that portion dealing with malpractice:

"Physicians and surgeons always have been the prey of dissatisfied patients who expected a physician or a surgeon to restore them to absolute health and entire physical perfection. Because of the failure of the medical profession to accomplish the impossible, thousands of malpractice suits are brought every year by patients who claim lack of skill or improper treatment on the part of their medical attendants. Formerly the defense of doctors against such exactions constituted a portion of a lawyer's practice by no means to be overlooked. Today every doctor carries an insurance against such attempts to secure money from him. These insurance companies defend these cases and pay such judgments as, perchance, may be procured—and they are rare—and these companies hire a lawyer for a salary, sometimes even maintaining lawyers who have no other business or concern. The average lawyer gets no malpractice case today unless he chooses to bring suits of this sort, which, as a rule, a reputable lawyer hesitates to assume. . . . Taken in all, I think it may safely be said that the day is not far distant when the lawyer, in the old sense of the word, will be confined exclusively to small towns, small business, and to unimportant litigation."

"TAKE THE WITNESS"

*By Alfred Cohn and Joe Chisholm*

## THE ARIZONA MEDICAL ASSOCIATION, INC. MEMBERSHIP REPORT

Available information discloses that as of December 31, 1951, licensed medical doctors, residents of the State of Arizona, totalled 750. In addition thereto, a total of 407 non-resident medical doctors were licensed in this state; exclusive of those holding a "temporary" or "special restricted" license.

Membership of the State Association on January 1, 1951, totalled 608. During the year just past, 55 new medical doctors were received into membership; 16 left the state; 3 resigned; 3 were dropped; and 5 deceased. The net result is a membership gain of 28, for a total of 636 as of January 1, 1952, comprising 584 Active, 45 Affiliate (17 of which are Military), and 7 Associate members.

Only one member has failed to date to pay his 1951 State Association dues, and 14 have become delinquent in the payment of 1951 AMA dues.

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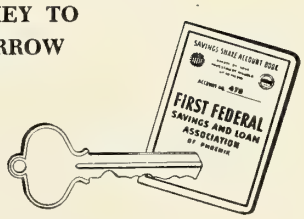
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JOSEPH G. RICE, PRESIDENT

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**Orange at Fourth Ave., Yuma**

# Woman's Auxiliary

## PRESIDENT'S MESSAGE

To carry out the purpose of the Medical Auxiliary we as members must unify our efforts. Unification develops strength. Though we strive to grow in numbers, achievement may be attained with few members of quality and action working as one.

Graham County organized in 1930 with six members but it was forced to disband in 1934. In 1951 it gives me great pleasure to welcome the doctors' wives who have reorganized the county with an increased potential membership, including one of the charter members. Best wishes to them for success in their work.

National emphasis is laid on self-education. Our membership is urged to be active in Health Agencies, to promote Nurse Recruitment, Volunteer Health Plans, the sale of *Today's Health* and the *Bulletin;* to sponsor good legislation, support the American Medical Education Foundation and participate in the Civil Defense Program. Arizona may point with pride to the hundreds of man hours being given by the members of the Woman's Auxiliary to their communities. Continued direction of this effort in public relations is bound to bring results.

The next two years will be a challenge. To meet this we must do our part in helping to solve the big problem today. That problem is to select for office good candidates who will work from the bottom up and not from the top down. We want to elect those who will strive for the freedom of all enterprise in this great country. Let each one of us be an informed, grass roots politician and an intelligent voter.

Mrs. Royal W. Rudolph
President

## WOMAN'S AUXILIARY 8TH ANNUAL CONFERENCE

The 1951 conference of State Presidents and Presidents-Elect, also National Committee Chairmen, was held again at the La Salle Hotel in Chicago, Illinois on November 14th and 15th.

The theme of the conference, "Working Together for Health," was enlarged upon by members and guest speakers alike until the evidence was concrete that we, as doctors' wives, are an Auxiliary to a Profession and, as such, have a very specific job to do.

From the beginning, the conference was no cold meeting but, was visible proof that coming together, working together and staying together can produce fine results. Women new to the national field were welcomed and made to feel at ease with women of considerable experience. From a group of forty women at the first conference, to eighty-six women present this year, shows a steady advancement of a governing body made up of persons willing to accept the responsibility given to them of achieving a definite goal.

Dr. Ernest B. Howard, Assistant Secretary for AMA, spoke on "The ABA and the Woman's Auxiliary." He showed many slides and gave much statistical data bringing into focus the "whys" of the amounts of money paid by doctors to the Association and the many channels through which this money is diverted.

Out of an income of $9,000,000 in 1951, very large sums were spent on scientific activities, educational campaign, maintenance, medical service, publications, rural health, all in a tremendous effort to educate either the doctors, 130,000 strong, in these United States or the public which they are dedicated to serve.

How does this concern the Auxiliary? "Very deeply," is the answer. We are the ambassadors of good will for our husbands who, busy with curative or preventive medicine, have turned to us for help. Make no mistake, when you became a doctor's wife, you accepted real responsibility to your community. Around us we recognize a great change developing. If that change is not to be in our way of life, which has come to us as a wonderful heritage, then it must come in our way of living life. Great things we cannot do, small things we will not do, but, to be caught in the do nothing field, we dare not.

Do, Dr. Howard asks, be alerted in this serious period before elections. Become informed on the issues at stake. Pass intelligent information to others through club, church and school affiliations. It is your job and mine to make clear that the issue of Socialized Medicine is not dead but acutely alive, that Socialism is a dishonest

movement not only in medicine, but in nursing or any other field, because it strangles individual enterprise.

Panel discussions were again the means to build the committee reports having the National Chairman in each instance act as Moderator with several State Presidents carrying out the discussions.

*Organization*: The Auxiliary is built on membership and this membership should more closely parallel that of AMA. The task as presented by Mrs. Leo Schaefer is to develop 10,000 new members. You are the Auxiliary; "Be a member —Get a member" is her personal campaign. United we come closer to realizing our goal—aiding the Health Program of AMA.

Organization of new groups was well covered and the good to be accomplished through individual work of Members-at-large was pointed out as difficult to estimate, but invaluable to the over-all picture.

*Finance*: This panel was entirely practical and to the point. Money, while in itself not a vital thing, becomes of vital necessity in expanding such an organization.

1. Cooperation was urgently stressed in collection of dues.
2. Close check and well kept records of financial needs and expenditures.
3. A budget reserve of 10% was suggested as adequate.

Three types of spending were brought to mind: Under-spending, over-spending and wise spending, the last of these often being better than saving when it comes to realizing objectives.

No apology need be given for acknowledging the fact a budget is indispensable, and so far, we have given only of our husbands earnings in support of a project they have requested.

Notice of dues should be followed by a second notice; then, having made a real effort to contact your potential number, if no response is received, the sound suggestion of national workers is to drop the deadwood from your membership roster. Only audited reports are acceptable at the national level with the deadline always March 31st.

Mr. Edward H. O'Conner, Managing Director, Insurance Economic Society of America, was the first of two guest speakers brought before this conference. His talk was uncommonly impressive due in part to his being entirely outside the medical group. Here was a successful business man pointing out the American way of life and asking us, as thinking persons, as leaders within our communities, to re-evaluate the ideals upon which this great country was developed. Freedom isn't free. It calls for never ending effort from all to keep alive the spark that gives life the meaning we want it to have. Free enterprise has it's faults but, it is surely better than socialism with its blessing of misery.

Clement Atlee has admitted that only the lower third of Briton's population benefitted from Socialism and you can read anywhere of the ruin of that nation under its effect.

What are we waiting for? If public opinion is equal to the sum of private opinions, let us influence opinion in the direction we feel is right —that the only security for all of us is a Pay as You Go plan in contrast to Socialization, including Medicine.

*Nurse Recruitment*: Here was brought to light the fact that from existing nursing ranks the Government is taking SIXTY women each day. Since 50,000 student nurses have been named a minimum requirement this year, the field is obviously open and the Auxiliary has been asked to do all in its power, in conjunction with nursing groups, to help fill this number.

Mrs. H. W. Smith from Woodward, Iowa, advanced the most pertinent suggestion of this panel in her discussion of future Nurses' Clubs, work to be enthusiastically inaugurated at the level of Junior High School pupils. These things we could do:

A. Talk with Councilors.
B. Arrange for meetings on school time.
C. Arrange for Talks by a Nurse.
D. Arrange for Talks by a Doctor.
E. Arrange for Talks by a Librarian.
F Field trips to a local Blood Bank.
G. Field trips to a local Nursing School.
H. Radio and TV programs.

A film showing "Girls In White" was given attentive reception by the audience along with the word this film is available for the asking from AMA. It could do much to interest girls and parents alike in nurses training as a future to be desired for many reasons.

*Community Service*: Teamwork is our job and this job we can do. As Mrs. Arthur A. Herold laughingly pointed out there are several good reasons why we should serve:

1. There are so many more women than men.
2. We have a greater life expectancy.
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5. We suggest how the other 15 cents is spent.

Arizona shone in this panel when Mrs. Royal Rudolph, our State President, gave her report of Rural Health Program as carried out by Pima County in the Radio Broadcasts by school children.

To let the job you tackle be applicable in a practical way to the area involved was the sensible implication of the many participating speakers.

*Health Days*: The stress of this panel was education plus action, pointing out in particular that a great difference lies between medical care and health. Medical care deals with a doctor-patient relationship whereas health is a Community responsibility.

Building a comprehensive program of education on such recurring topics as Mental Health, Food Sanitation, Accidents by sponsoring Exhibits, Movies, Question and Answer Forums and discussions with other groups, was discussed.

*Civil Defense*: This comparatively new subject was given much time and thought. The Moderator asked that we ponder the sad experience of Hawaii and suggested that, to make Civil Defense come alive, individual attention is necessary.

At luncheon the second day, Honorable Dr. Walter Judd, who is a physician, who *has been* a medical missionary and who is now the U. S. Congressman from Minnesota, made a deeply moving plea to Americans for the perpetuation of real Americanism wherein he begged for participation to replace lip service. He spoke of the wonder of America, containing 7% of the Earth's population being able to help support the remaining 93% and gave as the only comparable wonder the fact that there are today within our midst persons who work to reduce us to a position like that from which our forefathers fled.

*Legislation*: The panel was given on the relationship of legislation to medicine. The importance of confronting local medical personnel with the facts as presented in Bills before Congress and the necessity of dealing directly with our Washington representatives on occasion was conclusively shown.

The unusual scope of Auxiliary work seems staggering but, we understand this is a continuing program with the new officers expanding on the good themes of last year's group and promoting a development of forward moving ideas applicable to the changing times. Provocative stimulus was provided in particular to the Presidents-Elect who, with the help and understanding of their local groups, hope to prove the value of this worthwhile conference.

Respectfully submitted,
Ruth E. Schoffman, President-Elect
Phoenix, Arizona

## ANNOUNCEMENT

The Woman's Auxiliary to the Arizona Medical Association is pleased to announce the organization of the Woman's Auxiliary to the Graham County Medical Society at Safford, Arizona on December 4th, 1951.

Mrs. Royal W. Rudolph, State President, installed Mrs. Frederick W. Knight as President and Mrs. Donald E Nelson as Secretary-treasurer. Mrs. William P. Schoffman, Pres.-Elect of Arizona and Mrs. George S. Enfield, Organization Chairman were also present at the installation.

We are very proud that this little group, which numbers six, has felt that through organization they could be of more help to their husbands and of more influence in their community. They have plans ready to begin Health Radio Programs in January and are most enthusiastic about other projects which they plan to carry out in the future. We wish them the best of success and welcome them heartily to our midst.

Mrs. George S. Enfield
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# ARIZONA MEDICINE

*Journal of* ARIZONA MEDICAL ASSOCIATION

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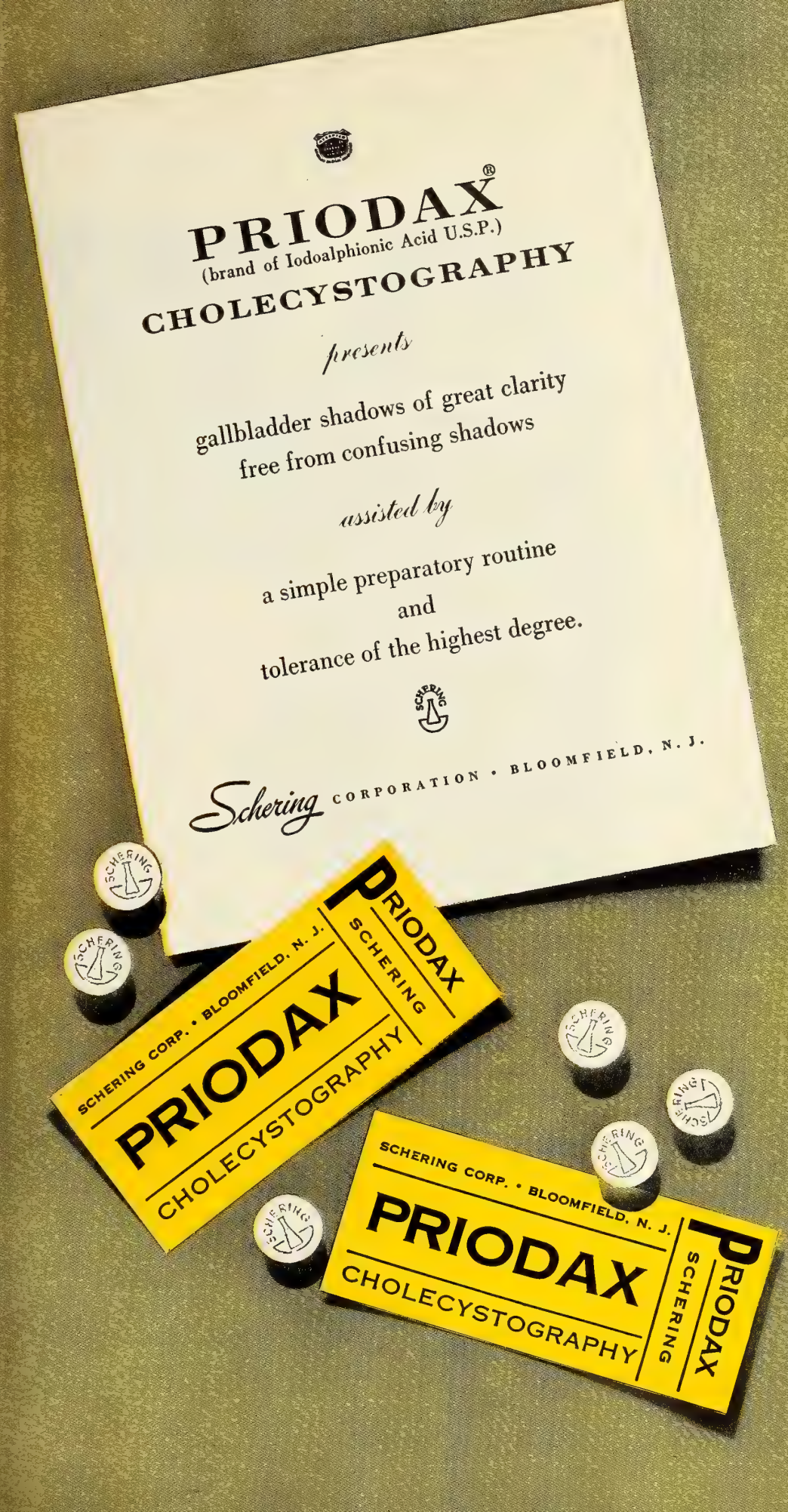
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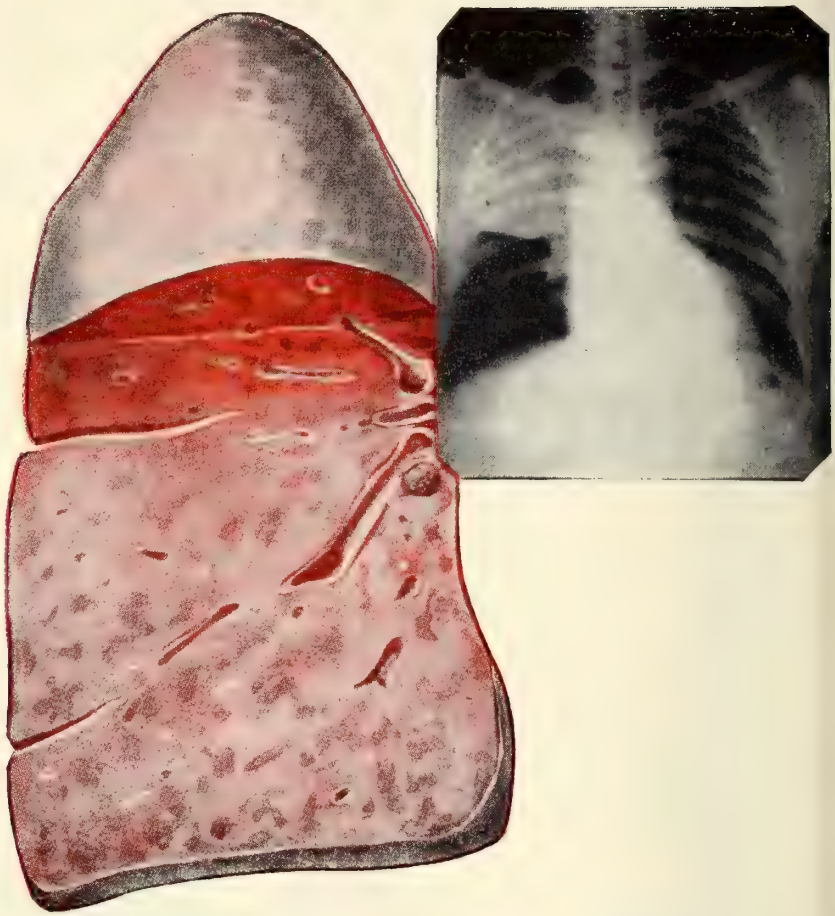
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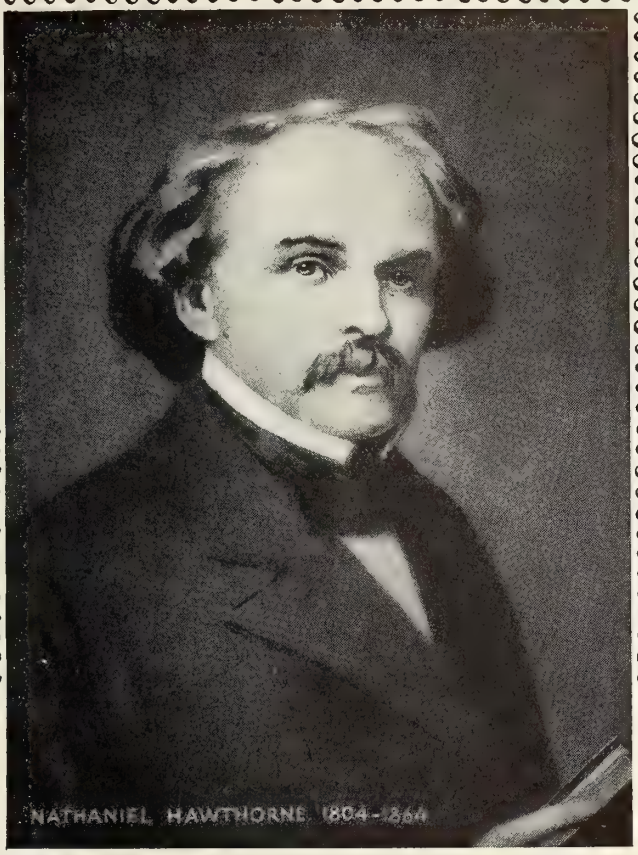
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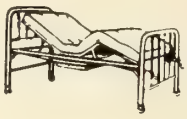
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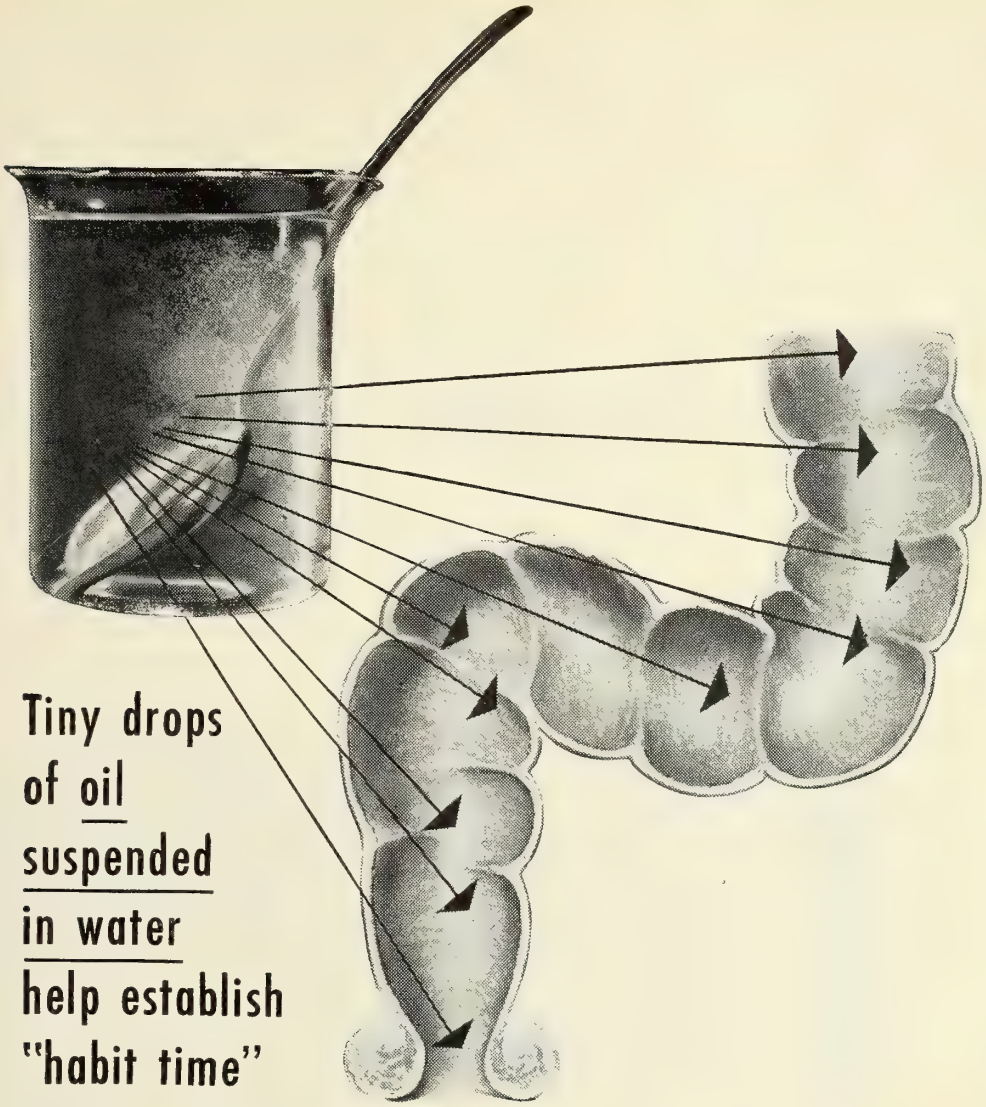
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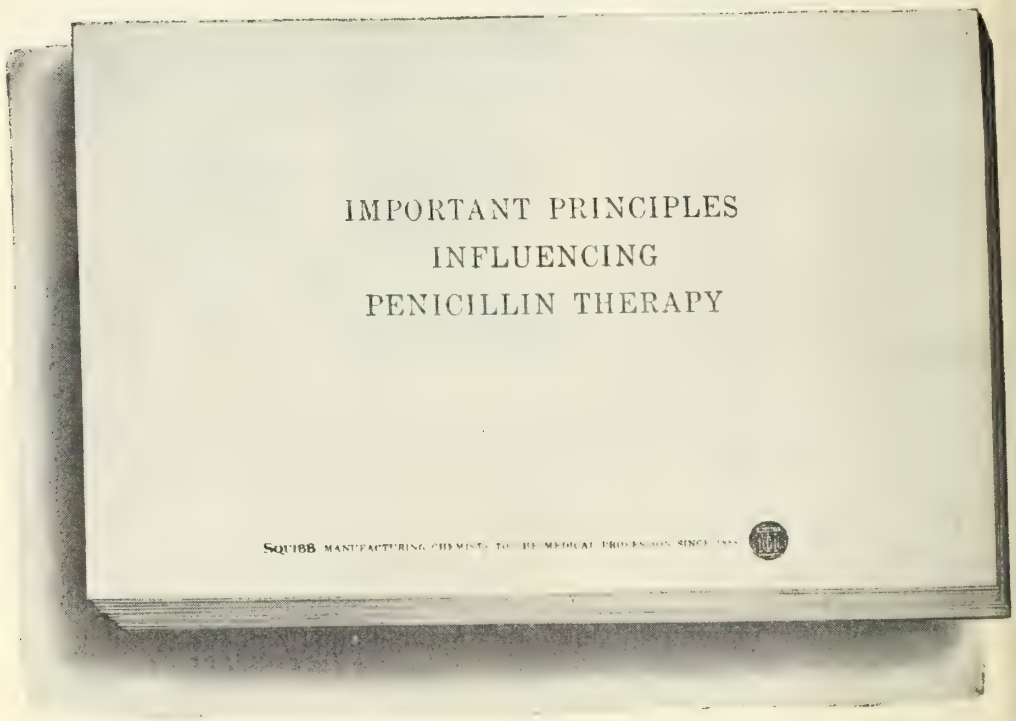
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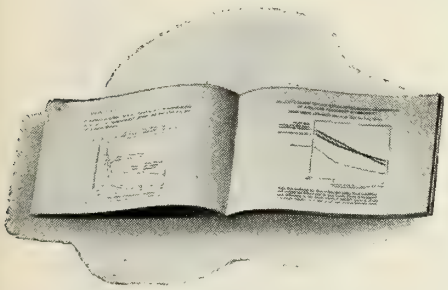
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ARIZONA MEDICINE
Journal of Arizona Medical Association

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# Original ARTICLES

## ANESTHESIOLOGY AND ITS PRACTICAL ADAPTATION INTO GENERAL MEDICINE AND SURGERY

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Professor of Anesthesiology

Georgetown University Medical Center
Washington, D. C.

Anesthesiology, has made most of its strides, at least with the medical profession, during the last twenty years. Prior to that time our numbers were so small that the dissemination of what information was available necessarily had to be rather limited. The last World War however was a great impetus for this specialty and many of those actively engaged in anesthesiology today had the opportunity of serving with surgical auxiliary teams in various hospitals at home and abroad during the last war. It followed quite naturally that the younger surgical men who were also actively engaged in the last war became very closely associated with at least a limited number of anesthesiologists; and the combined talents and afforts of these groups demonstrated that considerable efficiency could be obtained in the handling of numerous casualties and, most important, that mortality — and morbidity — could be reduced.

Thus, since the demobilization following the last war the specialty has been confronted with a very definite shortage of qualified personnel due to the demand on the part of surgeons for experts trained in this particular field. Even the relatively large numbers of approved residencies in the specialty of anesthesiology we have not been able to keep up with the demand for well-trained individuals. It is the fervent desire of those in a position to be conducting training programs that more physicians will be interested in the field, and realize the number of very excellent opportunities available in almost any part of the country.

It is my hope that I can point out to you some of the basic intents of the specialty and wherein the talents of those qualified in this field can work into the overall pattern and fabric of medicine and surgery. There has been a gradual wear ing down of the older ideas that the anesthesiologist was merely a glorified term to hang on to the shingle of an "ether sprinkler". As a matter of fact, we have been criticized for the term anesthesiology because many people found it difficult to pronounce anesthetist! At any rate, in a somewhat lighter vein, I believe that the anesthesiologists have not introduced the real fancy terminolgy that our good friends the dermatologists have fostered.

In the last few years many of you have followed the activities of the American Medical Association and their action and attitudes with respect to this specialty. You have also, I am sure, seen the opposition from various and sundry sources exhibiting objections to the basic policies announced by the A. M. A. In order not to prolong this particular feature let me say that it has been established by the American Medical Association that the practice of anesthesiology is the practice of medicine and as such other personnel assuming such responsi

*Presented before Arizona State Medical Association, April 30, 1951, Tucson, Arizona.

bilities are of variance with the policies of the medical profession.

It is a fact that anesthesiology embraces not only the various methods and agents of anesthesia but also a number of closely associated ramifications probably the most important of which is resuscitation in case of respiratory arrest. Thus, some of the most dramatic situations which are encountered as frank emergencies in hospitals, whether they are medical or surgical require the expert abilities of one qualified to adequately support respiratory failure, initiate adequate pulmonary ventilation and also to have the dexterity and facility for the support of the circulation. One can readily see that there are numerous situations which can arise frequently wherein the anesthesiologist may be able to be of very definite assistance, for example, bulbar poliomyelitis, emergencies encountered in the neo-natal period, patients with pulmonary edema the emergency treatment of common poisons including barbiturates, the medical management of certain respiratory infections such as whooping cough and acute tracheolaryngitis, as well as the clinical entity of shock irrespective of the etiology.

In other words, a well-qualified anesthesiology service in a well-conducted hospital should be prepared to handle or assist in the management of a great number of emergency procedures. In many locations today the anesthesiology department is known as the "trouble shooter" for almost any type of situation requiring immediate action and treatment. It is a type of service which must of necessity be on a twenty-four hour a day basis, and able to function in a matter of a few minutes. It is my feeling that as soon as a patient is admitted to the emergency room of a hospital that one of the resident anesthesiology staff or attending men should be notified if there is any question about the efficiency of respiration or the circulatory system. Having adequate equipment and qualified personnel available will greatly enhance the handling of this type of case. A subsequent change in medical management can be directed according to the necessities of the patient, but many times valuable moments are lost when the patient is first seen when oxygen therapy for example, and adequate fluid support should be provided.

It is our feeling that for patients who have been severely traumatized and have a very low blood pressure, an arterial transfusion should be considered. It is not that intravenous support of blood pressure is, as a rule, unsatisfactory, but the point is rather that arterial transfusions in very critically traumatized patients well be much more effective in returning blood pressure to reseaonable levels and require a much smaller quantity of blood. One can state definitely that in sever cases of shock with marked hemorrhage that one pint of whole blood intra- arterially will effect the same response, but much more rapidly, as three pints of whole blood intravenously.

The method of administration is relatively simple. Most cases will require a cut-down procedure on the radial artery or the femoral artery in the absence of any frankly exposed artery due to trauma, etc. In many instances a needle may be successfully passed into the femorad artery, particularly if pulsations can be detected by palpation. If not, a surgical cut-down is entirely appropriate. Therefore, we are very much in favor of arterial infusions in the cases of acute trauma and provocatively in the prophylatic treatment of shock for certain surgical procedures, such as operations on the mitral valve of the heart, portocaval shunt operations, certain intracranial lesions, and in other types of cardiovascular surgery.

Briefly, the arterial method of infusion should be available in all hospitals with some simplified mechanical apparatus for administering the whole blood under pressure as it is needed. I emphasize simplified apparatus so that certain hazards such as the inadvertent administration of air or oxygen intravascularly can be prevented or reduced to a minimum. As a matter of fact, the whole concept of the prevention of sudden deaths on the operating table or in the emergency ward is predicated on the availability of blood immediately and the surgical fortitude to initiate cardic massage as soon as it is evident that there has been an arrest of the heart. By way of precaution however, I recommend that a scalpel should not be used indiscriminately on all cases in shock or when there is some doubt as to whether there is cardiac arrest. The point of emphasis lies in the split-second decision to initiate cardiac activity. The use of certain vasopressor agents as ephedrine sulphate, neosynephrine, and the pure pressor fraction of epinephrine, namely levo-arterenol should be considered. In the event of unanticipated or inadvertent hemorrhage during surgery we feel it is wise to have a sterile length of rubber tubing with a 15-

guage needle attached on one end readily available for the immediate insertion into any large artery that is exposed at the time of surgery. The free end of this tubing can be inserted into a blood filter device and by means of a simple air pressure device such as a blood pressure bulb, blood can be forced into the artery.

In passing, the advisability of intentional bloodletting in order to reduce systolic blood pressure must be carefully evaluated in each case. There are those who feel that the loss of blood at operation can be definitely reduced by this intentional lowering of blood pressure, and that the removed blood properly citrate for heparinized can be returned to the patient as needed. There is undoubtedly a definite place for this type of procedure in certain surgical interventions.

Another advantage of intra-arterial infusion that should be mentioned is the fact that there is less diffuse capillary oozing because of the relatively small quantity of whole citrated blood required to support blood pressure as contrasted with the relatively large amount of citrated blood ordinarily required when administered intravenously. The capillary oozing is, I feel, definitely related to the amount of citrate which is introduced into the general circulation when the intravenous route is used.

In conjunction with this observation let me interject, that on certain occasions when diffuse unexplained capillary oozing occurs during surgery, during or after a transfusion there is a possibility that there may be an element of improper matching of the donor and recipient. I do not make this a hard and fast rule that generalized oozing at the time of surgery associated with blood transfusion is a definite sign of the incompatibility of blood, but with what knowledge we have available at the present time seems to be one of the clues; at least under general anesthesia. As you know, it is very rare to have some of the other signs of the incompatibility of blood, such as urticaria or a pain in the lower back, demonstrated under general anesthesia. These are more apt to be seen in the conscious patient in the event of blood incompatibilities.

In normal and in operative obstetrics the anesthesiologist is in a position to be of definite assistance to the obstetrician not only in the choice of premedication and anesthetic agents and methods, but in a very important procedure of handling difficult resuscitation problems in the newborn. We have been following a suggestion in the management of Caesarean section babies particularly, and also the breech and version infants, of aspirating the stomach of the newborn with a very fine rubber catheter in order to prevent the aspiration of amniotic fluid, mucus, and other debris. We have observed that infants born via these routes practically routinely have between one and three ounces of fluid in their stomachs, and that this material is frequently responsible for respiratory complications. Briefly, our technique in handling the newborn is to aspirate the mouth and nares immediately and to supply oxygen with one of several types of resuscitating units, and then as soon as it is feasible to pass a small catheter into the stomach and aspirate the material which is present. The infant is held in the head-down position for this procedure. In certain instances because of respiratory obstruction the same catheter can be directed into the larynx and trachea for aspiration purposes.

There is little to be added to this relatively simple procedure, but I emphasize it to you as being a very valuable adjunct to the overall problem of handling the newborn infant. Supposedly, the explanation of this accumulation of mucus in the stomach of Caesarean section, version and breech babies is the absence of the squeezing action exerted through the normal birth canal. It is my feeling that all respiratory complications in the newborn should be carefully observed for at least twenty-four hours and oxygen supplied routinely. Very prompt catheter suction should be used discreetly with particular care being exercised to avoid any unnecessary trauma.

While discussing certain emergency situations associated with obstetrics and gynecology we should recall to mind the importance of adequate fluid replacement in the cases of ectopic pregnancy and certain abnormal eventualities reflecting themselves upon the placenta, such as placenta prae via, premature separation of the placenta, and rupture of the uterus. In this connection the anesthesiologist many times will be of considerable help in the delicate procedure of partial exsanguination and blood replacement in the management of erythroblastosis, or associated Rh—Hr variations. The management of the eclamptic patient has been thoroughly presented by many authors, and it ap-

pears on the basis of the work of Hingson(1) and others that conduction anesthesia may have a definite role in successful therapy of this condition. The use of continuous spinal anesthesia or epidural anesthesia will minimize the tendency for convulsive seizures, and produce a decrease in blood pressure. We have been able to substantiate the observation of Hingson, and feel that conduction anesthesia is one important type of therapy to be considered when this complication of pregnancy is encountered. It does not infer that other types of therapy, including the veratrine regime are not to be considered.

It is well to point out probably at this time that conduction anesthesia either by the continuous spinal or epidural route is valuable in cases of anuria except in those instances wherein the anuria is due to blood incompatibility. In my experience conduction anesthesia is not of much value in this type of complication. However, in acute renal complications in children, frequently associated with respiratory infections, and some of the exanthemata, conduction anesthesia is very much worthwhile in treating anuria.

As I mentioned previously there are a number of medical emergencies wherein the anesthesiologist can be of assistance, for example in certain types of poisoning such as that due to barbiturates. In these instances we are confronted chiefly with a respiratory and circulatory problem. It may be necessary to utilize suction bronchoscopy to remove substantial accumulations of mucus, and to insert an intratracheal tube for a varying period of time, and in the profound sub-lethal instances to carry on artificial respiration. A point frequently overlooked in this connection is the utilization of an artificial adult respirator of the type used for treating certain forms of poliomyelitis. In fact, a respirator of this type is invaluable for the treatment of any case of respiratory arrest. I suggest therefore that this piece of apparatus be considered in handling respiratory complications due to the ingestion of certain poisons, notably barbiturates. The judiicu osuse of certain drugs which are classified as analeptics should be considered. More precisely possibly and perhaps more effectual is the treatment of barbiturate poisoning by means of exchange transfusions, or dialysis by means of an artificial kidney. We have had two successful barbiturate poisoning cases in our institution successfully treated by the artificial kidney.

*The Adaptation of Regional Anesthesia in Therapeutic and Diagnostic Procedures*

Certain types of conduction anesthesia, ganglion block and individual nerve or plexus blocks have a certain value in therapy and diagnosis At the present moment there is some confusion and difference of opinion in regard to the effectiveness, and the rationale in utilizing stellate ganglion block in the treatment of certain cerebrovascular accidents. On the basis of clinical experience alone, omitting the experimental data with respect to cerebral blood flow, stellate ganglion block, I believe, has proved iself to be a relatively safe procedure, and one which is definitely beneficial in certain types of cerebrovascular accidents.

The block in our experience has been of value particularly in cases of cerebral thromboses (particularly thrombosis of the posterior interior cerebral artery), and in the more rare embolic and vasospastic cerebrovascular episodes. As far as cerebrovascular hemorrhage is concerned it is my feeling that stellate ganglion may possibly enhance the bleeding, but inasmuch as the diagnosis of hemorrhage in many instances is obscure the sequelae in cases of hemorrhage have not been notably outstanding. I do not know of any instance of cerebral hemorrhage which was made worse by the performance of this block.

It is important to perform the block as soon as possible after the accident has occurred and in our experience it has not been necessary from a clinical standpoint to repeat the injection more than two or three times. The greatest amount of benefit will be derived from the first block of the ganglion. The hazards of this procedure are few and they are namely: (1) intravascular injection and (2) subarachnoid injection of the anesthetic agent. Blocking of the sympathetic chain below the level of the stellate ganglion has been of definite value in certain cases of coronary thrombosis, particularly for the control of anginal pain. The sites of injection for the control of anginal pain are the upper thoracic segments namely, $T_{1\ 2\ 3\ 4}$ and occasionally $_5$. Elsewhere in the body certain individual nerves or plexuses of nerves may be blocked for diagnostic purposes when searching for the relief of pain, and the anesthesiologist can in many in-

stances be of considerable assistance in making a differential diagnosis.

It has been quite well established that regional block anesthesia is of definite benefit in certain vascular disorders such as thrombophlebitis, and in other neurovascular disorders of either an acute or chronic type. In fact, an improvement in technique is recommended at the present time over the conventional type of lumbar paravertebral block, namely, the continuous epidural type of conduction anesthesia. This procedure requires only one injection, is less painful and can be continued over a matter of days with very little discomfiture to the patient.

In addition, we have found the use of continuous epidural or continuous spinal anesthesia of definite value in the treatment of acute and chronic pancreatitis. The dramatic relief of pain in the acute cases of pancreatitis is quite significant. On certain cases we have maintained a continuous type of conduction anesthesia for as long as seven to ten days.

*Parenteral Therapy*

The anesthesiologist is vitally interested in the proper preparation of patients prior to surgery, and likewise during and after surgery. I believe it is important that there be close teamwork between the internist, surgeon, and anesthesiologist in effecting the proper type of fluid and protein balance for all patients undergoing major surgery. The hematocrit reading is important. A simple working rule that has been found to be reasonably accurate is that for every unit below 42 (hematocrit) the administration of 100 cc. of whole citrated blood is indicated. For example, if the hematocrit reading is 38 approximately 500 cc. of whole blood will be required to restore the hematocrit reading to a normal level.

There should be careful surveillance of adequate intake of carbohydrates, proteins, vitamins, and minerals. Inasmuch as carbohydrates are probably the most rapidly utilized foods, and supply approximately two-thirds of our body energy, and are particularly important in the sparing action on proteins it is important that we consider carefully the administration of these substances.

For a long time, we have been in the habit of using dextrose solutions in water as a source of carbohydrates. More recently, however, we have found that the use of fructose (invert sugar) is a definite improvement over dextrose for intravenous administration. Weinstein (2) has shown that:

> "When 50 Gm. of invert sugar given in 500 cc. of water at a rate of 1.5 Gm. per kilogram per hour, or in 34 minutes to the average adult, there is 99.2 per cent utilization and assimilation.(3) When 50 Gm. of dextrose are injected at a rate of 0.77 Gm per gilogram per hour, a process consuming 69 minutes or twice the time required with invert sugar, the amount utilized is 94 per cent.(3)"

The use of invert sugar therefore is definitely merited in parenteral therapy because it will reduce the time required for intravenous infusion, and prevent the long tiresome intravenous treatment. This type of carbohydrate therapy can be incorporated with various protein hydrolysate preparations, and also successfully augmented with adequate amounts of essential vitamins.

Closely associated with the problem of parenteral feeding and therapy is the consideration of the use of intravenous alcohol, chiefly for two purposes: first, for its sedative and analgesic action and secondly, for a source of caloric intake.

The sedative and analgesic properties of 7.5 per cent alcohol are dramatic in those patients operated upon under regional anesthesia, including caudal, epidural, spinal, nerve block, and infiltration types. Patients receiving it for preoperative apprehension, become relaxed, doze, become euphoric, and often are amnesic to the surgical procedure. Thus we are able to derive all of the advantages of regional anesthesia without excessive sedation and respiratory depression. The alcohol-protein-dextrose solution is administered after operation to control pain, or to materially decrease the intake of opiates and barbiturates. The rate of flow of the intravenous alcohol must be regulated to conform with each individual's tolerance in order to produce maximum analgesia without encountering restlessness and inebriation.

According to Best and Taylor (4) the minimal daily caloric requirements for an individual are approximately 200 calories. By adding alcohol, which has a caloric value of 7 calories per gram, to intravenous fluids the daily requirement may be maintained without exceeding a normal fluid intake. Thus, from each 1000 cc. of the above solution 820 calories are available:

7.5 % Alcohol =60 Gm.=420 cal.

5 % Protein hydrolysate =50 Gm.=200 cal
5 % Dextrose or invert sugar=50 Gm.=200 cal.
820 cal.
per 1000 cc. of solution

It is evident, therefore, that a daily intake of 2000 cc. of the above solution of 7.5 per cent alcohol, 5 per cent protein hydrolysate and 5 per cent dextrose would approximate the basal metabolic requirements for a patient under basal conditions of bed rest.

At this point it is significant to point out the fact that in maintaining adequate caloric and fluid intake in children with small, or poor veins, that parenteral feedings can be given deep into the muscle beneath the fascia lata with relatively little discomfiture. If hyaluronidase is added to the infusion mixture this material will definitely enhence the diffusibility and absorption of the fluid.

There are valuable adjuncts to intravenous therapy in certain cases where the veins are not particularly plentiful, or where they are difficult to locate. A small piece of plastic tubing, nine or ten inches in length, can be introduced through a suitabe gauged needle, thence into the vein, and advanced for a distance of one inch or so, subsequently removing the needle leaving the catheter within the lumen of the vein. With reasonable care the plastic tubing can be kept patent and free from blood clots. The incidence of reaction about or within the veins has been minimal. Such an arrangement has been used for continuous intravenous infusion frequently for as long as forty-eight hours There are varying sizes of plastic tubing that may be used. The larger caliber tubing is required for blood transfusions. A fourteen-gauge needle is usually needed to accommodate the larger size plastic tubing.

### *Summary and Comment*

It is my desire to point out the various places in medicine and surgery wherein the talent and skill of the anesthesiologist can be utilized. The well-qualified specialist in this field should not be limited solely to his ability for the administration of anesthetic agents. He should likewise not limit himself to the mere technical aspects of therapy. There should be a very wholesome relationship between the surgeon, internist, and anesthesiologist and by means of modest representation the value of modern anesthesiology can be sincerely appreciated.

The specialty of anesthesiology offers a very excellent field for careful clinical investigation which can be closely tied in with the basic sciences. In fact, it is amost essential for the proper progress of anesthesiology to work hand in hand with the fundamental sciences of physiology, pharmacology, pathology, etc. Without this linkage in basic research the improvement in methods of handling anesthesia would be impeded. At the present time one of the most urgent needs in the field of anesthesiology is the type of information which can be gained from those who are qualified to understand the intricacies of the electro-encephalograph. Up to the present time there has been little progress in developing precision instruments which will help to eliminate some of the "guess work" incident to the administration of anesthetic agents It is my feeling that electroencephalography will materially assist in obtaining more accurate and specific information concerning the mechanism of anesthesia and the effect of certain agents and combination of agents on the higher centers. It is quite possible that information will be made available with the aid of precision instruments such as the electroencephalograph to detect the onset of surgical shock. I believe that anesthesiology has been carelessly termed an ancillary specialty and I sincerely hope that well-qualified individuals in this field will be able to dispel the notion that the management of safe anesthesia is a simple matter. It is a much more complex problem than is generally recognized.

In closing, may I repeat the statement which has been made by others that good surgery more than deserves competent anesthesia and that mediocre surgery requires it. We have definitely passed the era of simply providing anesthesia, and are intimately tied up with the problem of maintaining safe anesthesia.

Bibliography

1. Hingson, Robert A. and Southworth, Jas. L.: The Use of Continous Caudal and Continous Spinal Analgesia in the Diagnosis, Prognosis, and Rehabilitation of the Peripherad Vasculer Diseases of the Lower Extremities, The Military Surgeon, Vol. 100, No.6, June, 1947.

2. Weinstein, Jacob Joseph: Parenteral Therapy with Invert Sugar, Annals of Western Medicine and Surgery, August, 1950.

3. Weinstein, J. J.: Rapid infusions of "invert sugar". To be published.

4. Best, C. H. and Taylor, N. B.: Physiological Basis if Medical Practice. Williams and Williams Co., 1948.

# THE DIAGNOSIS AND TREATMENT OF SMALL BOWEL OBSTRUCTION

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This is a discussion of a few of the points relative to a serious abdominal condition. A condition which even now, with constantly expanding knowledge of basic physiology and advanced methods of medical and surgical treatment, has a countrywide mortality which is still probably well over 20%. This condition is acute small bowel obstruction. It would not be feasible to discuss intestinal obstruction as a whole including the large bowel. The conditions are so different in their manifestations, physiology, etiology and treatment that they readily fall into separate categories.

A very brief review of the functional anatomy of the intestinal tract is in order. That portion of the upper gastro-intestinal tract derived from the foregut has to do with digestion and receives its blood supply from the celiac axis. This includes the stomach and the duodenum. The jejunum, the ileum, and the right half of the colon are derived from the midgut, receive blood supply from the superior mesenteric vessels, and have to do principally with absorption. The small bowel, primarily the ileum, is concerned chiefly with food absorption from its liquid contents, while the right half of the colon absorbs water and salt. The left half of the colon, the sigmoid, and the rectum are derived from the hindgut, receive blood supply from the inferior mesenteric artery, and is concerned with the storage and expulsion of nonabsorbable residue.

It is the chain of events which follows the interruption of the normal downward stream in the small bowel with which we are concerned today.

Obstruction in the small bowel can be further divided into high obstruction, usually in the jejunum, and low obstruction, in the ileum. The latter is by far the most common, and roughly comprises about 90% of all small bowel obstruction. The level of the pathological process in the small bowel determines the physiological changes which follow the obstruction. A high bowel lesion leads to rapid loss of water and chlorides because of excessive vomiting. This in turn lowers the blood chloride and unless replaced, a general breakdown of cell protoplasm follows. Lower obstructions in the small bowel are slower to produce the excessive fluid and chloride loss, but are more apt to result in bowel damage due to circulatory disturbance. In general, the higher the obstruction, the more rapid and the more profound is the pathologic physiology, while the lower the lesion, the greater the chance for interference with viability of the bowel. Obviously, a full coverage of all of the physiological changes in the gut, the blood, the tissues and the organs in small bowel obstruction cannot be accomplished in the allotted time. Suffice it to say that an understanding of these processes is essential to intelligent treatment.

The causes of small bowel obstruction are many and varied. In general, postoperative adhesions lead the list. Strangulated hernias of various kinds are next. Other causes include inflammatory adhesions, intussusception, volvulus, and vascular occlusion. Gallstones may get into the ileum and produce obstruction, and metastatic and primary malignant tumors are other factors. Intestinal polyps, Meckel's diverticulae and other rarer lesions are occasionally found.

The diagnosis of small bowel obstruction is usually not difficult and may in most cases be readily established. Whether the obstruction is of the open loop type with a free reverse passage of intestinal contents, or the closed loop type with impending bowel damage, is another matter. Distinction of those cases in which surgery is required immediately, or relatively soon, and those cases which can be treated by conservative medical means and prolonged bowel decompression, frequently requires the most careful surgical judgment. This must include evaluation of the history and all of the clinical and laboratory findings. The surgeon in these cases shoulders a grave responsibility. It is the neglected or imperfectly diagnosed case that goes on to bowel rupture, peritonitis, and frequent death.

As is usually true, a careful history of the onset and course of the present illness, and a knowledge of the past history is essential. This

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is particularly true with reference to previous abdominal surgery or the presence of known hernias. The symptoms are quite characteristic, and pain is the outstanding one. This is severe, usually comes on suddenly, is colicky, recurrent, and continues despite vomiting in the early cases. Later, if strangulation and bowel damage is present, the pain becomes more constant and is associated with development of abdominal soreness. Regurgitant vomiting is the next most common symptoms. It comes on early and with great severity in high bowel lesions, and always develops relatively soon even in low ileal lesions. Excessive quantities of fluid, chorides, and digestive juices are lost by this route. Early in the obstruction, this comprises a major portion of the vomitus, and as the disease progresses in the lower and more common lesions, the vomitus becomes foul and feculent in character. Associated with the vomiting, the patient is frequently aware of borborygmus. Distention, often more real than apparent, is present early in the condition and is usually confined to the stomach in high lesions and to the lower abdomen in low obstruction. Distention progresses as the disease develops, particularly if adequate suction decompression is not being employed.

Constipation is an unreliable symptom in small bowel lesions, and gas and fecal material may be passed in several enemas, even with a complete obstruction. This should not be relied upon for diagnosis.

The clinical and laboratory findings vary with the severity and the completeness of the obstruction, and the progress of the pathological changes. Audible borborygmus, associated with colicky pain, is highly suggestive. In most of the cases, the bowel sounds are high-pitched and gurgling, occurring in rushes. If the bowel becomes distended and paralyzed, or if peritonitis is developing, the abdomen becomes relatively silent. Early in the disease, the patient shows little or no dehydration and the pulse, temperature and blood pressure are at or near normal. Later, fever develops and if bowel damage is developing, the pulse becomes progressively more rapid. This sign is of value in distinguishing between operative and non-operative treatment. Another important finding is the white blood count. This will usually be around 12,000 to 14,000 with a shift to the left, even in early lesions. As the bowel damage progresses, the white blood count consistently elevates and the shift to the left becomes more pronounced. Dehydration develops rapidly if unrelieved. In severe strangulating obstructions the pulse is rapid, weak and thready. The skin is cold and clammy, and a state of shock is present. The abdomen is rigid, distended and tender. Abdominal soreness and the presence of rebound tenderness indicate impending or actual bowel damage with exudation and peritoneal irritation. Rupture of the bowel produces the characteristic findings of a spreading peritonitis. One of our most valuable adjuncts in making a diagnosis of small bowel obstruction is the use of the x-ray. Flat plate studies of the abdomen unerringly reveal small bowel obstruction in the great majority of cases. Not only this, but the trained roentgenologist frequently tells us the extent of the obstruction and the approximate location of the lesion. The finding of isolated gas-filled loops of small bowel are diagnostic of obstruction, and even in high lesions with no gas-filled loops visible, the absence of free gas in the large bowel suggests the high condition.

X-ray studies of the abdomen cannot be too strongly urged in all suspected obstructions. In fact, in any of the obscure abdominal conditions, the lead to proper diagnosis may be obtained.

Other laboratory procedures, such as the blood urea nitrogen, the carbon dioxide combining power, chloride determinations, and serum protein studies, are of value in treating cases of prolonged obstruction with severe physiological disturbances.

If the mortality of acute small bowel obstruction is to be lowered two things are necessary. First, the public must be enlightened and educated to these emergency cases, so that they will seek earlier medical care. Secondly, the medical profession must be continually alert to apply our present day knowledge to the diagnosis and to more adequately treat these patients early in the illness. The later the patient is seen, and the greater the procrastination on the part of the physician, the higher the mortality rate will be.

Intestinal decompression, since Wangansteen's first reports on this work, has become an integral part of the pre and the postoperative treatment. This is accomplished with either gastric or duodenal suction, or by the passage of a Miller-Abbott tube. It is here that a word of

warning must be interjected. Dr. William R. Moses is correct, when he says that the Miller-Abbott tube has no place in the treatment of acute mechanical small bowel obstruction. The time element required for successful passage of a Miller-Abbott tube is too long in these cases, and to wait for this is courting disaster. Furthermore, cases are on record where, with a perfectly functioning Miller-Abbott tube and a decompressed bowel, a rupture and peritonitis have occurred. Too often, this procedure gives the doctor a false sense of security. In most acute cases, all the decompression necessary can be carried out with gastric and duodenal suction rapidly and effectively. Postoperatively, this is sufficient to control distention, even after extensive resections.

The greatest use of prolonged decompression is in the postoperative paralytic ileus with distention and obstruction. Most of these cases will respond well to conservative measures, including suction and replacements of fluids, proteins and electrolytes.

In early obstruction before distention is marked, fluid loss is great, and the general condition of the patient is satisfactory, immediate operation may be performed. It is in this group, where surgical treatment is utilized before the serious results of obstruction become apparent, that the most gratifying results are to be obtained. It is here that extensive resections can be avoided, and the patient restored with a minimum of reaction. If seen later in the disease, surgery must be delayed for a few hours. In high lesions, fluids and electrolytes must be replaced as rapidly as possible. In low lesions, if strangulation has occurred, present or impending shock must be combatted with large amounts of plasma and blood. Fluids must be replaced, and in all cases, gastric or duodenal suction instituted promptly. A word should be said here about the causes of the shock syndrome seen in acute small bowel obstruction with strangulation and vascular impairment. It has long been thought that various toxins formed at the site of the obstruction contributed to this state of collapse. However, adequate replacement of proteins, blood and electrolytes usually restores these patients to a satisfactory operative condition. Many surgeons now think the shock picture is produced by the excessive loss, by transudation into the bowel wall, the bowel lumen, and the peritoneal cavity, of first plasma and later red blood cells. This loss is caused because venous occlusion always precedes arterial occlusion in acute bowel obstruction, leading to capillary seepage. The process is not as evident in strangulated hernias, probably due to the enveloping peritoneal sac. Another word of warning—even after successful release of strangulation and vascular obstruction, restorative measures should be continued to combat capillary seepage, which may continue for hours following relief of the obstruction.

As soon as patient restoration is completed, which usually requires only a few hours, operation can be performed. The anesthetic of choice is probably spinal, supplemented by oxygen and sodium pentothal. This gives the greatest relaxation and a minimum of aspiration danger. If general anesthetic is used, the curare-like drugs are helpful in keeping the frequently distended bowel quiet.

The operative incision should be as physiological as possible to prevent future incisional hernias. The operative procedure, generally speaking, should be the minimum required to successfully relieve the obstruction. This may require only the cutting of a single adhesion, or it may involve extensive resection of the small bowel. In resections, many doctors prefer side-to-side anastomosis after closure of the cut bowel ends. Recently, more and more surgeons are shifting to end-to-end anastomosis. It has been shown quite conclusively that if the small bowel is sectioned at an angle with the longer segment at the mesenteric attachment, end-to-end anastomosis produces a better blood supply with less danger of leakage than does the side-to-side procedure.

Enterostomies for the relief of distention and exteriorization procedures are being used less and less. Better physiologic restoration, improved surgical technique, and the use of the antibiotics and chemotherapy, is making the use of these procedures less necessary all of the time. Avoidance of these procedures contributes to the lowering of mortality in small bowel obstruction.

Postoperatively, suction should be maintained two, three or four days, until healing occurs, and the edema at the suture line has subsided.

A few representative cases wil be described to re-emphasize some of the factors that have been presented.

CASE NO. 1—Mrs. A. R., St. Joseph's Hospital,

December 1941: This 42-year-old woman, mother of three grown children, had pelvic surgery for retroversion of the uterus ten years prior to her attack. Some type of a suspension had been unsuccessfully performed, and an adhesion band was stretched across the fundus above the bladder. This patient became ill with severe colicky abdominal pain around 9 P.M. in the evening. This was followed by severe recurrent vomiting. I saw her at 3 A.M. She was admitted to the hospital, and a white blood count was found to be around 12,000 per cu. mm of blood. There was soreness across the lower abdomen and some muscle guarding. The urine was normal. Flat plate revealed an isolated loop of small bowel containing gas in the pelvis. The patient's condition was excellent, and immediate operation was done. Eight inches of obstructed small bowel were caught beneath the adhesion across the uterus. The operation consisted of removing the band. The bowel viability was good, and the postoperative course was smooth and uneventful. Early operation saved this patient a serious illness.

CASE NO. 2—Mrs. D. S., Good Samaritan Hospital, June 1942: Patient aged 42; married, had had no children or previous surgery. She developed a mass low in the right side, while doing her housework. This was associated with severe recurrent pain and vomiting. I saw her about three or four hours after the attack began, and found a strangulated right femoral hernia. She was operated, soon after admission, from above the inguinal ligament. Reduction was relatively easy, and the bowel was not severely damaged. The hernia was repaired The patient recovered without trouble. This case was easy, but the patient was thin and the mass was readily palpable. The diagnosis of an incarcerated femoral hernia is far more difficult in obese ptients, and can be overlooked quite easily if not hunted for, in obscure obstructive cases.

CASE NO. 3—Mr. J. V., St. Monica's Hospital, March 1946: A 75-year-old Italian; this man was never previously operated. He was admitted with nausea, vomiting, and abdominal pain, which subsided soon after arriving at the hospital. Three or four bouts of similar nature occurred, and a mass appeared in the right upper quadrant. Fever and leukocytosis were present; abdominal distention developed, which was controlled by continuous Wangensteen suction. The patient succumbed to generalized peritonitis ten days after admission, and on autopsy a Richter type hernia was found with a partial strangulation and subsequent perfortion of the ileum. This occurred in the left inguinal ring. This patient died of a peritonitis. The mass in the right upper quadrant was an acute cholecystitis. Although the patient was seen by both medical and surgical consultants, surgery was never believed to be indicated; yet had it been possible to make a diagnosis early, this man could have been saved. Incidentally, the obstruction was intermittent in character and the x-ray failed to aid in the diagnosis.

CASE NO. 4—February 1949, St. Joseph's Hospital, Mr. G. H. age 74, a minister: This man had never before been ill in his life, that is of any serious nature. He became ill in the evening with severe, cramp-like abdominal pain and regurgitant vomiting. This persisted during and throughout the night, and he was seen the next morning with some distention. He was admitted to the hospital. His white blood count was found to be 12,900 per cu. mm. of blood, 91% polys, temperature 100, pulse still good, but quite rapid. Early dehydration and evidence of impending shock were present. The abdomen was diffusely tender, more marked in the lower right quadrant. Rebound tenderness was present, and bowel sounds were high-pitched and active. An x-ray of the abdomen revealed an isolated loop of gas in the small bowel, and the roentgenologist reported mechanical small bowel obstruction in the upper ieum.

Fluids and plasma were given, and upper abdominal suction started. Blood was secured, and operation through a right rectus incision was begun about three hours after admission. About eighteen inches of small bowel had become caught beneath what appeared to be a congenital band on the undersurface of the mesentery to the small bowel. The incarcerated gut was dark and gangrenous, and vascular obstruction was well advanced. Resection in healthy tissue was accomplished and continuity reestablished with side-to-side anastomosis. Closure was without drainage, although there was considerable serosanguinous transudate in the abdominal cavity. The only postoperative complication was difficulty in reestablishing bladder function, and within two weeks after discharge, this patient had to be readmitted and a transurethral resection performed. His recovery on his second

admission was also uneventful. Early operation and intensive replacement and restorative measures aided greatly in this happy outcome.

CASE NO. 5—St. Joseph's Hospital, January 1948, Mrs. E. A., age 49: Married, the mother of four children; this patient had a pelvic laparotomy in 1937; somewhat indefinite as to what was done, but the appendix was known to have been removed. In March 1947, I did a vaginal hysterectomy. This route was chosen because the uterus was prolapsed downward, and there was an associated cysto-urethrocele and rectocele. The operation was somewhat difficult technically because the uterus was quite large, and there was a loop of small bowel adhered across ths fundus. Recovery was smooth. December 31, 1947, this patient awakened at 4 A.M. with a severe, recurrent, colicky abdominal pain. This was followed in several hours by regurgitant emesis, which failed to relieve the pain. Obstipation was present, and repeated enemas gave no relief. I saw this lady at 8 p.m. that evening, and immediately hospitalized her. Examination revealed an acutely ill patient with a rapid pulse, white blood count of 14,000 per cu. mm, 89% polys, and a normal urine. Temperature was 99. The blood pressure was normal. The bowel sounds on admission were not very active. The abdomen was tense and tender Rebound tenderness was present, and a pelvic examination revealed what was thought to be an indefinite mass, which was low in the abdomen and high in the pelvis. X-ray films of the abdomen showed isolated loops of gas-filled small bowel in the right lower quadrant, with some extension across the midline, and there were also some loops containing gas present in the left lower quadrant. The x-ray diagnosis was acute mechanical small bowel obstruction.

Hydration, nasal suction and blood were started, and the patient was operated at 11:30 P.M. through a low midline incision. An acute volvulus was found. About 22 to 24 inches of small bowel were so tightly tied together that disentanglement could not be made, even after removal. The mass was gangrenous. The abdomen contained a large amount of serosanguinous fluid. Resection in healthy tissue was followed by side-to-side anastomosis. 1000 cc. of blood was given at the time of surgery, and constant upper abdominal suction maintained. This patient had no postoperative complaints, and her course was smooth. She has remained well since her operation.

CASE NO. 6—R. T., boy aged 17, St. Joseph's Hospital, operated March 24, 1950: 6 weeks prior to this admission, this boy suffered an upper abdominal gunshot wound. The bullet entered just above and to the left of the umbilicus. It passed just beneath the stomach, tore a large hole in the jejunum, struck a thoracic vertebra at an angle, and came out the left flank. At exploration, the jejunum was repaired and the retroperitoneal bleeding was controlled with gelfoam gauze. His recovery was relatively uneventful, after two rather stormy days. He went home at the end of nine hospital days. On March 24, he developed intermittent abdominal pain and vomited once or twice. This was six weeks following his original injury. When seen, he had a white blood count of 13,600 per cu. mm. of blood with 82% polys. The lower abdomen was rigid and tender, more marked in the right lower quadrant. This appeared to be a typical case of acute appendicitis, although we were somewhat suspicious because of his recent gunshot wound. However, despite this, he was opened through a McBurney incision, which proved to be inadequate when a mass of small bowel was found adherent and obstructed in the area of the sacral promontory on the right side. The McBurney incision was then closed, a lower right rectus incision made, and the obstruction relieved by blunt and sharp dissection. This obstruction apparently was caused by an inflammatory reaction set up in the lower abdomen by the irritating digestive juices spilled out of the jejunum at the time of his gunshot wound. His postoperative course following this operation was uneventful.

CASE NO. 7—Mrs. E. A., Good Samaritan Hospital, September 1949, 26 years of age: This patient had been operated on two times previously, for an appendicitis and an ovarian cyst. She developed characteric pain and vomiting, distention, and elevated white blood count. Abdominal soreness was not marked. Nasal suction failed to relieve the patient, and x-ray revealed several gas-filled loops of smal bowel. At operation, the sight every surgeon dreads to see was presented. . . . An extensive mass of intra-abdominal adhesions, with many adherent loops of small bowel. Extensive adhesolysis was done—I do not know yet which specific adhesion caused the obstruction. At any rate, she

recovered without trouble. Since that time, I have had to remove her gallbladder. She was delivered a baby, and I have hospitalized her four times for varying grades of recurring obstruction. Fortunately, she has not yet again required surgery. Every surgeon is familiar with these unfortunate people, with their many scarred abdomens. This particular type of a case should be carefully analyzed and closely followed during attacks because frequently conservative treatment can save the patient another scar.

Information on three more cases, of obstruction, of other physicians, are all of interest. An acute small bowel obstruction was present in a woman aged 74. Surgery revealed an ileal obstruction due to a large gallstone. Removal was followed by recovery. Four months later, she obstructed again and after a period of observation, was reopened. At this time, no cause for her symptoms could be found, until on the third postoperative day, when the patient passed a large gallstone into the bedpan. Apparently, under the anesthetic or near the time of surgery, the stone had passed through the ileocecal valve and escaped.

A high bowel obstruction of especial interest was recently treated. This patient, a female, aged 64, developed a high bowel obstruction with profuse vomiting. Under Wangensteen suction and restorative measures, she improved temporarily, but when her bowel sounds began to diminish and the pulse to accelerate, she was explored. A sausage-like tumor was found in the midjejunum. This was 2½ cm. wide and approximately 8 cm. long. It was removed by incision into the jejunum, and later was determined to be an unchewed, undigested cantaloupe pulp. This patient responded well to her surgery, but she died 12 days postoperatively from a pulmonary embolism. This represents a most unusual case of obstruction—an intestinal phytobezoar.

The third patient, a female, aged 47, was under observation for two days after onset of abdominal pain and vomiting. She gradually developed what was thought to be a complete small bowel obstruction, and on operation she proved to have an intussusception, which was produced by an intestinal polyp that began travelling down the lumen of the small bowel. Resection in this case was followed by recovery.

SUMMARY: (1) Acute small bowel obstruction has a countrywide mortality of over 20%, making it a formidable surgical problem. (2) Early surgery in mechanical obstruction is strongly urged. Conservative measures should be reserved for those cases where the surgeon is sure that small bowel damage is not being done. (3) Emphasis is placed on a careful history and physical examination with full utilization of the laboratory and the x-ray. The latter is particularly helpful. (4) Physiologic restoration before and during surgery is of primary importance in these cases. (5) Surgical and anesthetic techniques are briefly discussed. (6) Ten illustrative cases are reviewed.

REFERENCES

1. Crile, George Jr., M. D., F. A. C. S.: Medical Aspects of Intestional Obstruction. Medical Clinics of North America, March 1948: 373-381.

2. Skjold, A. C., M. D.: Bowel Obstruction. Minnesata Medicine, Vol 31, No. 1; 52:86, January 1948.

3. Talley, Evans E., A. B., M. D., F. A. C. S.: Small Bowel Obstruction. The Journal of the Oklahoma State Medical Association, Vol. 41, No. 5; 181:185, May 1948.

4. Spackman, James G., M. D.: Obstruction Lesions of the Small Intestine and Sigmoid Due to Irradiation. Annals of Surgery, Vol. 127, No. 2; 121:127, January 1948.

5. Shallow, Thomas A.: Advances in Diagnosis and Treatment of Acute Intestional Obstruction. Postgraduate Medicine, Vol. 7, No. 3; 166:172, March 1950.

6. Coller, F. A. and Buxton, R. W.: Acute Obstruction of the Small Bowel. The Journal of the American Medical Association, Vol. 140, No. 2; 135:139, May 14, 1949.

7. Hendricks, William and Griffin, William D.: Intestional Obstruction. The Surgical Clinics of North America, Vol. 27, No. 1; 51:72, February 1947.

8. Moses, William R., M. D.: Reduction of Mortality in Intestional Obstruction. The American Journal of Surgery, Vol. LXXVII, No. 2, 235:239, February, 1949.

9. Lichtenstine, Maunal E., M. D.: Basis for Planned Management in Intestinal Obstruction. The American Journal of Surgery Vol. LXXVIII, No. 3, 362:370, September, 1949.

10. HHarris, Franklin I. and Gordon, Milton: Intestinal Intubation in Small Bowel Distention and Obstruction. Surgery, Gynecology and Obstetrics, Vol. 86, 647:658, Jan.-June 1948.

11. Wangensteen, O. H.: Intestinal Obstructions, Springfield, Ill., Charles C. Thomas, Publisher, 1942.

# INDUSTRIAL UROLOGY

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The discussion of the urologic aspects of some industrial injuries recalls a very ancient problem. One of the classical illustrations of the relation of occupation to disease was the discovery of a high incidence of scrotal cancer in chimney sweeps. This finding was soon followed by others of causal relationships, until the medical student of the eighteenth century was admonished to ask every patient his occupation as a guide to diagnosis. This recognition of the relationship between occupation and possible disease is, of course, now universal. Yet as recently as 1939 many States defined compensation as relating to industrial accidents only, not recognizing industrial disease as being compensable. Only in the past few years have States changed the wording of their laws to read "Industrial injuries" instead of "Industrial accidents." This reluctance, of course, was due to financial considerations in fear that the recognition of the causal relationship between disease and occupation would incur additional liabilities and costs. And while an accident is a dramatic occurence and the cause and effect are promptly obvious, the exposure to a noxious agent and the onset some time later of a disease is a less tangible. With a shifting and migratory population and with brief terms of employment the correct cause is often obscure, and the blame is placed with only considerable difficulty. An estimate made in Wisconsin some years ago showed that about four per cent of all compensation cases are medical in nature; yet I wager these four per cent caused more headaches than the 94 per cent accidental cases.

The development of the aniline dye industry, especially in Germany, was followed by the development of bladder carcinomata(1), in workers exposed to the naphthol and zenzol compounds used in the manufacture of the dyes. It took only a little study to associate the cause and the effect in these cases. Only the strictest supervision of ventilation and prevention of skin contact succeeded in the reduction in the number of cases of bladder carcinoma. It took a lot longer to impress the danger on the workers themselves, and, in fact, they had to be protected from their own carelessness.

There are other less well known and newer chemicals with a specific action on the urinary bladder and kidneys. The rapid rise of the synthetic industry and great advances in organic and synthetic chemistry has been followed by new syndromes of renal irritation with end results that we cannot as yet foresee, since enough time has not elapsed, and the worker population has not been steadily employed at these newer skills. We can understand this if we recall that the aniline dye tumors were found in older men who had been employed for between twenty and twenty-four years at this occupation.

Many chemicals exert an irritating effect on the renal tubules during their concentration and change in the hydrogen ion level. The concentrated chemical then irritates the bladder epithelium. There have been a number of cases of hematuria reported in chemical factory workers(2) in which cystoscopy and retrograde pyelograms did not show any evidence of tumor formation. Recently Lyons(3)(4) reported six cases of hematuria in workers handling a specific chemical 5-chloro-orthotoluidine without finding any bladder tumors.

One of the commonly used and well known chemicals that has not been recognized as dangerous to the kidneys is Carbon Tetrachloride.(5) This fluid is used extensively. In Phoenix it is used in various cleaning and dyeing plants, and it is used carelessly. In 5000 routine admissions to the U. S. Marine Hospital, Farrier and Smith found 12 cases of carbon tetrachloride poisoning with evidence of renal damage. Of these twelve cases five died. Since the average physician thinks of carbon tetrachloride poisoning as an acute and rather dramatic disease with sudden onset and a liver death, they overlook the chronic effects on the kidneys. The liver damage is often slight and transitory and may disappear in 48 hours. Only small amounts of the poison need be absorbed at a time to cause fatal outcome. The transitory liver damage may soon be followed by lower nephron pathology, uremia and death.

Other chemicals dangerous to the well being

*Read before Sixtieth Annual Meeting Arizona Medical Association, Tucson, May 2, 1951.

of the urinary tract are trichlorethylene, naphthylamine, various paint thinners and turpentine. While I was Resident Urologist at the Hillman Hospital in Birmingham, Alabama I was confronted by many cases of hematuria in women of a lower economic stratum. It was the habit of these women to prevent pregnancy by the daily ingestion of a minute amount of turpentine—not quite enough to prevent pregnancy—but quite enough to bring about severe hematuria. The difficulty cleared up after the habit was discontinued.

In the State of Arizona where mining is pursued, the workers are exposed to various metallic dusts, their sulfides and other compounds. Cadmium, copper, nickel, lead, silver are all toxic in various halogen and oxide and sulfide combinations. All of these are renal irritants—the degree of irritation depends on the amount of the exposure, his preliminary conditioning by alcohol ingestion, his susceptibility to the agent, and other factors.

If the sole effect of these irritants above mentioned were the transient hematuria, cystitis and renal irritation there would be no great concern. But this is not so, since the irritated and hyperemic renal epithelium and vesical epithelium become weakened and subject to infection. I have seen a number of cases of severe intractable, incurable, advanced pyelitis in men exposed to smelter fumes, these men being camparatively young, vigorous and without any outward evidence of debility. They give a history of exposure to metal compounds ranging from a few weeks to a few years. They are copper smelter workers, underground miners mirror makers, storage battery operators. A recent case was exposed to minute amounts of mercury while silvering mirrors—without bothering to follow the precautions prescribed by his employer—and without noting any systemic effects, until he developed real mercurial renal poisoning. Others are seemingly without symptoms except for the laboratory findings of heavy pyuria. The intravenous pyelograms and retrograde studies show advanced and markedly deforming pyelonephritis. The infective organisms vary from case to case, but all are very resistant to therapy, and rapid recurrence is the rule, because the scarred renal epithelium has low resistance and is prone to relapse of the infection. Tracing back the histories there was evidence of gross carelessness in neglecting to use respirators, in careless inhalation of noxious fumes, lack of hand washing prior to eating, etc. and chiefly, in preparing the kidney for good reception of the poisons by freely imbibing in alcoholic beverages. It has been shown repeatedly that almost all of the industrial poisons that cause renal damage are much more toxic if the host is conditioned by alcohol intake.

A similar problem exists with regard to the formation of kidney stones in farm laborers, field workers, foundry men, in this our very hot and dry climate. We do know that renal calculi have a higher incidence here in the Southwest than in any other part of the country—this climate being similar to that of the Near East Asia—an area notorious for calculus formation in man. The prophylactic agent for the prevention of formation of calculi is an excessive intake of water and salt. If the employer assures a fairly accessible supply of cool, potable water and small salt tabets, and he permits the workers to go to the source and drink he does a great dea to prevent formation of stones. The rest is up to the workers, and the adage "You can drive a horse to water, but you can't make him drink" applies. The workers should have it impressed on them that a goodly water intake will be of great benefit.

A most recent industrial problem of urologic nature, one that will be met with more and more often because of the atomic age is uranium nephritis. Uranium salts are absorbed very readily thru various channels into the body. They circulate there and are quite harmless as long as they are the alkaline salt of uranium. They move through the body in combination with bicarbonates and gradually accumulate in the liver and fat tissue. They reenter the circulation in dilute form. As they pass thru the kidney tubules, however, the bicarbonates are reabsorbed as the body conserves the alkaline ions to mtaintain itself in electrolyte balance, and the uranium remains in the tubules as an acid salt. It promptly sets up a necrosis in the distal convoluted tubule, and the picture of a lower nephron nephrosis ensues. The effect is similar to that seen with other heavy metals. A number of cases of this type of nephritis have been reported.(6) As the search for uranium deposits increases and the atomic age brings more people into contact with uranium this problem will be seen more and more often and will have to be safeguarded against. Fortunately

the presence of even small amounts of uranium in the urine can be readily detected—in fact it is a good method evaluation of the amount of uranium in the body—and so a ready check can be effected for industrial purposes.

Before leaving the chemical effects of various agents on the kidney and the bladder I would like to mention a practical aspect of these foregoing problems. I believe that renal lesions could be handled much more readily if all employers would screen their help more carefully before hiring them, especially in occupations that may have some inherent hazard such as copper mining, smelter work, heavy metals industries, etc. A recorded urinalysis, blood pressure, flat plate of the abdomen for stone, and a careful history would be of tremendous help in evaluating all cases should they come before a commission. The effort expended before hiring would be a great help before firing.

Having mentioned a few chemical problems there are some injuries due to physical agents that deserve mention. Since most of the traumatic lesions of the genito-urinary tract are self-evident and resolve themselves into proper treatment there is no need to discuss them. The secondary effect of extensive trauma on the lower nephron is also well known and need not be discussed.

There are two cautions in traumatic urology that well could be reemphasized. First—in all cases where blood appears at the meatus after crushing injury to the bony pelvis or perineum a catheter should be inserted into the urethra and the bladder. If the catheter can be passed, *it should be left indwelling.* Oftentimes there is a partial urethral tear that can be passed by before edema ensues, but when the second physician tries to pass a catheter he meets with deformity and is unable to pass a catheter, where the first physician had no difficulty at all. The indwelling catheter would prevent many suprapubic cystotomies. The second admonition is that in any case of injury to the flank an immediate intravenous pyelogram should be made to be followed in a few days by a second one, the two sets affording an excellent comparison as to the extent and progress of any renal injury.

There is another industrial urologic problem that requires much clarification. This is the problem of epididymitis in a worker where no direct blow has been sustained to the genitalia. The worker will give a history of a sudden stress, strain, misstep, a slipped foot, catching a heavy weight suddenly or unexpectedly etc. This is followed in a day or so by swelling of the involved epididymis which looks like a typical acute infectious epididymitis, has a prolonged period of hospitalization, is characterized by frequent recurrence, operation, unilateral sterility, absenteeism, residual tender scrotal contents and poor productivity. The pathogenesis is as follows: These patients have a chronically infected prostate gland, seminal vesicles and ejaculatory ducts to begin with or a combination of the above or any one of them alone. When a sudden stress is placed on the abdominal muscles the intraabdominal contents bear down on the perineum, and the man tightens his levator ani muscles to keep his perineum from sagging. The sudden compression squeezes these infected glands between the abdominal contents and the levator ani muscles where they are located, similar to one squeezing a tube of tooth paste between two fingers. The infected material is forced down the vas deferens into the epididymis and there sets up an infection. A similar experience awaits any physician who occasionally massages an infected prostate gland too vigorously only to have his patient return in a few hours or days with a full blown epididymitis. In classic animal experiments the vas deferens has been exposed to the scrotal skin. On voiding two streams of urine are seen to flow from the severed vasa, and any sudden rise in intra-abdominal pressure, such as a strain or cough is followed by a greater spurt out the severed vas. This shows that back flow down the vas clearly does exist.

We are confronted by a disabling lesion not the direct result of a blow to the organ involved. Claim for days and days of disability is submitted for adjudication. This problem has not been settled satisfactorily in Arizona, altho it has been under discussion. Other States, such as New York, have come out definitely with the ruling that unless the epididymitis is the result of direct trauma to the scrotum industrial liability does not exist. Some urologists express the opinion that even in the presence of direct trauma to the testis inflammation does not ensue unless there is preexisting infection present. However, most Compensation Boards ad-

mit the case compensable if proof of direct trauma is obtained.

The next problem concerns stress incontinence in older women who have had to be bedridden for industrial or other accidental causes not directly affecting the urinary tract. Middle aged or older women who have sustained a fracture and were necessarily bedfast for several weeks will bitterly complain on arising from their bed of being unable to contain their urine, and promptly blame the accident for their plight.

Recent studies on the physiology of micturition by fluoroscopy have shed a lot of light on this problem of stress incontinence in women with weakened pelvic floors, cystocele and urethrocele. In the normal individual in the ordinary course of voiding the first phase consists of relaxation of the Levator Ani muscles, thus permitting the floor of the bladder to drop below the level of the pubis and permitting a few drops of urine to flow into the relaxed funnel of the posterior urethral–trigonal dip This, in turn, is then followed by compression of the abdominal muscles voluntarily, with the compression of the bladder that follows, initiating contracture of the bladder wall musculature and relaxation of the vesical sphincter. Thus the flow of urine is initiated and completed. Stoppage of the flow is accomplished by elevation of the Levator Ani muscles, elongation of the trigone and closure of the funnel of the internal urinary meatus. In women with torn or stretched Levator Ani muscles the bladder is in a constant state of the first phase of urination and any stress will bring on the second phase at once. Only a continuous and steady constant effort to maintain some tonus in the pelvic floor keeps these women relatively dry. The prone position helps retain the urine since the weight of the abdominal viscera is off the pelvic floor. When these women are placed at prolonged bed rest they lose the little tonus left in their pelvic floors, and when they arise they have become incontinent. Obviously the injury or accident has no direct bearing on the incontinence. We could help these women by insisting that they maintain pelvic floor tonus by exercising their muscles while at bed rest. This they can do by continuous focus of effort on the involved muscles. It is my opinion that from a compensation viewpoint there is no special merit to their claim for incontinence any more than there is for weakness of the leg muscles due to disuse.

This brief discussion is not a complete survey of urologic industrial problems, but aims to bring out the less clear points in an attempt to instigate the formulation of more clear cut opinions of industrial responsibility so that uniformity will guide the decisions in these cases.

Bibliography

1.Billard-Duchesne, J. L. Tumors of bladder due to amines J. D'Urol. 54: 168-171, 1948.

2. Oppenheimer, R. Diseases of the Urinary Tract in Worker in Chemical Factories. Urol. & Cutan. Rev., 32: 358-374, June, 1928.

3. Friberg, L. Proteinuria and kidney injury among workmen exposed to Cadmium and Nickle dust; perliminary report. J. of Indust. Hyg. & Toxicol. 30: 32-36, Jan. 1948.

4. Lyons, J. S. Hematuria in Workmen in Analine Dye Industry Due to 5-chloro-otoluidine; 6 cases. J. Urol. 277-281, Oct., 1947.

5. Cahill, G. F. Hematuria its clinical isguificance. J. Urol. 47 224-234, Mar. 1942.

6. Farrier, R. M. & Smith, R. H. Carbon Tetrachloride Nephrosis. J. A. M. A. 143: 9651967, July, 1950.

7. Gordon, A. J. Uremia following inhalation of Carbon Tetrachloride. J. Mt. Sinai Hosp., 10: 792-795, Mar. & Apr. 1944.

8. Newman, W. F. Urinary Uranium as a measure of exposure hazard Ind. Med. & Surg. 19: 185-191, April, 1950.

9. Graves, R. S. & Engel, W. J. Experimental Production of Epididwmitis With Sterile Urine: Clinical Implications. J. Urol. 1950.

10. Darmady, E. M. Traumatic Uremia. J. Bone & Joint Dis-Surg. 30-B: 309-321, May, 1948.

11. Trumper, M. Industrial Poisonings. Indust. Med. 10: 152 155, April, 1941.

12. Singer, P. L. Seminal Vesiculitis. Urol & Cutan Rev. 50: 328-330. June, 1946.

Singer, P. L. Seminal Vesiculitis. Urol. & Cutan. Rev. 54: 609-611. Oct. 1950.

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# PHOENIX Clinical CLUB

## MASSACHUSETTS GENERAL HOSPITAL CASE NO. 29381

**The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.**

A fifty-one-year-old man, a factory worker entered the hospital because of acute abdominal pain.

One week prior to admission the patient developed upper abdominal "distress", the nature of which he was not able to describe well. It was apparently not related to food. There was no associated back or shoulder pain, nausea or vomiting, but he was forced to stop working. His bowel movements had been fairly normal with a laxative perscribed by his physician. At the onset of his present illness he contracted a "cold" after removing storm windows. There were no chills, fever or urinary disturbances or chest pain. He had remained in bed more or less constantly. On the night before admission the pain in the abdomen became worse and he developed chilly sensations. He was given a hypodermic by his doctor and sent into the hospital. There was no vomiting. His last bowel movement had been two days before admission, at which time he had had two loose stools. He had not passed gas by rectum since then.

Physical examination disclosed a moderately obese man with questionable cyanosis of the lips and fingernails. The skin was moist. The heart was not enlarged. A short systolic murmur was heard in the aortic region, which was not transmitted. The aortic second sound was greater than the pulmonic. The heart rate was regular and of good quality. The lungs were clear. The abdomen was flat. No peristalsis could be detected anywhere. There was voluntary spasms all over, but when the muscles were relaxed by flexion of the legs, there was variable response to palpation—once it was "sore", then "no pain", then "a little tender" and so on. No definite masses were felt. There was no costovertebral tenderness. Rectal examination showed no tenderness or masses. The prostate was slightly enlarged. There was no edema or ascites.

The blood pressure was 150 systolic, 80 diastolic. The temperature, pulse and respirations were not recorded.

Urine examination was negative. Examination of the blood showed a white-cell count of 16,200, with 84 per cent neutrophils. Three hours later the white-cell count was 11,300. A blood Hinton test was negative. An electro-cardiogram was interpreted as showing normal rhythm, at a rate of 80, with low $T_2$ and total inversion of Lead 3; Lead 4 was normal.

A roentgenogram of the abdomen showed considerable gas and fecal material in the proximal colon. The colon distal to the splenic flexure was collapsed. A film taken on the following day in the prone and upright positions showed several dilated loops of small bowel on both sides of the midabdomen as well as a large, single loop of bowel that appeared to be small intestine. There was also a small amount of gas in the colon in the region of the splenic flexure. An upright film showed fluid levels within several of the loops on the right side of the abdomen. There was no air beneath the diaphragm. A barium enema on the second hospital day revealed the passage of barium to the cecum and the terminal ileum without delay. There was a moderate amount of facal material within the colon that somewhat hindered the examination. No gross evidence of obstruction or definite evidence of ulceration or of a filling defect could be seen. There were two loops of slightly dilated air-filled small bowel in the left midabdomen. Barium passed through the ileum to the air-filled loops of bowel, and one loop gave the appearance of partially encircling a mass over the left side of the lumbosacral junction; the loop in question was somewhat narrowed and irregular in outline.

An electrocardiogram on the third hospital day was normal.

On the third hospital day the patient had a spontaneous bowel movement. Peristalsis was audible, and the abdomen flat. On further questioning it was brought out that the patient had had two former episodes of substernal pressure with radiation down the left arm, lasting three to five minutes and coming on while he was

working on a chair. These attacks had been diagnosed as angina pectoris and the patient was advised to live a moderately restricted life. Since then the patient had had no similar episodes.

A gastrointestinal series on the fifth hospital day showed that passage of barium through the pylorus was very slow. A large residue of barium was seen in the colon, especially in the region of the cecum, which was dilated. There was considerable gas in the hepatic and splenic flexures. Hourly films. showed slow passage of barium to the small bowel, and for a period of three hours no progression was seen. The stomach was almost completely empty at three hours, and all the barium was found to be in a few loops of the small intestine on the left side of the abdomen in the region where the air-filled loops were visible on the previous examination. At four hours, however, barium had passed through the narrowed loops previously described. Spot films taken over this region showed no definite evidence of ulceration. The narrowing was believed to have been due to extrinsic pressure. At four hours the head of the barium meal was in the region of the ileocecal valve, but had not entered the cecum. No mass could be definitely visualized.

Following the gastrointestinal series the patient was given an enema, with good results. He was seen twice that evening and appeared well. At about 4:00 the following morning he began to complain of gas pains, and another enema was given. Soon after that the patient was found to be sweating profusely. The blood pressure could not be obtained. The abdomen was slightly distended. The pulse was about 120. Examination of the blood revealed a white-cell count of 29,800, with 87 per cent neutrophils. Intravenous fluids were given, and a Miller-Abbott tube inserted. The patient's condition apparently improved throughout the day. The following night he passed 50 c.c. of bright-red blood.

The white-cell count on the seventh hospital day was 22,300, with 91 per cent neutrophils. The urine showed a two plus test for albumin. The nonprotein nitrogen was 44 mg. per 100 c.c., the protein 5.8 gm. The chloride was 92.8 milliequiv. per liter, the carbon dioxide combining power 20.6 millimols. The serum amylase was normal. A portable film of the abdomen showed no demonstrable air-filled small intestine. The stomach was filled with air, and the colon contained a large amount of barium and considerable gas.

A film taken on the eighth day showed the tip of the Miller-Abbott tube in the second portion of the duodenum. There appeared to be a small amount of gas in the slightly dilated bowel. A large amount of barium was seen in the large intestine. The right side of the diaphragm was elevated, and there were linear areas of atelectasis in the right lower lung field. The abromen remained somewhat distended. The Miller-Abbott tube was passed to the jejunum, as confirmed by x-ray, and the stomach was kept decompressed by a Levine tube.

The white-cell count on the eleventh hospital day was 31,300, and hemoglobin 12.6 gm. The blood protein was 6.0 gm. per 100 c.c., and the chloride 97.2 milliequiv. per liter. A portable film now showed considerable air in the stomach and some gas-filled bowel, presumably the colon. The Miller-Abbott tube lay over the lumosacral articulation.

The following day the patient passed dark blood by rectum and had some bloody drainage through the Miller-Abbott tube. He became pulseless, comatose and died.

DR. ROBERT T. PHILLIPS

This 51 year old factory worker was admitted because of abdominal pain. This was first described as upper abdominal distress, unrelated to the taking of food and with no reference.

On admission the patient was noted to be obese and possibly cyanotic. The abdomen was flat and silent. It was tender but not locally or remarkable so.

The blood pressure was normal. The wbc is elevated and rises steadly during the next 12 days to 31,000 just before death.

The electrocardiogram is normal on two occasions but the protocol leaves me with the impression that this man has coronary heart disease.

A roentgenogram of the abdomen showed considerable gas and fecal material in the proximal colon. The colon distal to the spheric flexure was collapsed.

A flat plate the next day showed dilated loops of small bowel—a barium enema revealed the passage of barium into cecuh and ileum without delay.

On the 6th hospital day following a rather vigorous and inconclusive G. I. series our patient went into shock. The following night he passed 50 cc of bright red blood from the rectum I hope.

So his wbc goes up and his chlorides and $CO_2$

come down and his serum amylase is normal means nothing anyway at this late date.

Follows more confusion the patient bleeds from the bowel again. On the 12th hospital day the patient expired.

Acute pancreatic necrosis occurs most often during middle life with equal frequency in men and women and is some what more common in the obese or alcoholic patient. Its onset is almost always sudden and is characterized by severe pain in the upper part of the abdomen frequently extending through into the back.

Pain may persist for days, it commonly is not adequately relieved by morphine. Nausea and vomiting are the rule.

On initial physical examination findings may be meager. The temperature pulse and blood pressure may be normal. Abdominal tenderness is moderate later to become more marked in the epigastrium. The amount of abdominal rigidity varies. Distention and shock may develop. Conclusive laboratory findings are elevations of the serum amylase and lipase valeric. The elevation in serum amylase occurs early and then falls to normal in 24-48 hours. The serum lipase may be elevated for 1 day.

Mesenteric vascular occlusion occurs more frequently in the male 9 to 4. Youngest patient 35, oldest 83, average 51.9.

The etiology is obscure but there is more often than not a definate relationship to one of the following cardiovascular diseases, blood dyserasias, intrabdominal infections causing mesenteric thrombophlebitis and trauma to the mesenteric vessels.

The correct diagnosis preoperatively, of mesenteric vascluar occlusion is unusual. This condition has been known to mimic any of the acute abdominal emergencies as well as acute myocardial infraction. One of the best diagnostic leads is the fact that, if after thorough study of the history physical finds and results of laboratory investigation the diagnosis is still very obscure, then mesenteric vascular occlusion should be considered seriously. The history may be highly suggestive, particularily if the patient is suffering from one or more of the conditions having a bearing on this etiology. The patient usually complains of a severe constant gnawing abdominal pain centering mainly in the mid portion of the abdomen. As peritonitis sets in, the site of the pain will shift to only the involved bowel. The bowel may be stimulated during the first few hours of the attack and then gradually become paralyzed. Prior to the stage of paralysis the patient may have diarrhea and pass blood per rectum. The passage of blood is of great diagnostic significance.

Physical examination is usually inconclusive. The findings vary markedly, depending on the duration of the illness and the extent of involvement. Early in the attack pain may seem to be out of all proportion to the meager abdominal findings. The patient may or may not be in a mild state of shock.

Abdominal examination may now disclose involuntary muscle spasm overlying the region of parietal peritonitis. The abdomen is silent. The wbc is usually elevated. Urine may be normal EKG and serum amylase are normal.

Rendich and Harrington say "The possible diagnosis of thrombosis of the mesenteric vessels should be among those considered. When the plain x-ray of the abdomen discloses bowel dilated down to the region of the spheric flexure simulating a mechanical obstruction. If a subsequent barium enema reveals no obstruction, it is believed that the diagnosis may be ventured with some probability.

It is worth mentioning that as progressive narrowing of the mesenteric arteries occuring in other vessels the patient may complain of intermittent intestional claudication or abdominal angina. The aching gnawing periumbilical pain usually comes on one or two hours after meals and lasting during the intestinal activity of digestion. If the patient is examined during this stage of his illness an abnormality will not be found to explain his abdominal pain. However as narrowing of the arteries increases thrombosis may occur with resulting acute abdominal crisis from which he may or may not recover spontaneously. Klein suggests that the number who recover spontaneously from minimal lesions may be much greater than the number of patients who die from severe lesions. Pain commencing one hour after the evening meal is a common finding among cases reported in the literature.

The tip off in this protocol, I hope, the description of x-ray examination of the large bowel "showed considerable gas and fecal material in the proximal colon. The colon distal to the sphenic flexure was collapsed", "a barium enema on the second hospital day revealed the passage of barium to the cecum and terminal ileum without delay".

Based on this my diagnosis is mesenteric vascular thrombosis.

DR. PALMER DYSART

A 51 year old male factory worker developed vague upper abdominal distress accompanied by a cold. Although there were no marked related symptoms noted, it must be assumed that there was an associated weakness which confined him to his bed for the ensuing week until he was hospitalized because of an increase in the pain, at which time indefinite, equivocal findings were described upon physical examination.

An elevated white blood count was present which might have been due to an unlocated septic process, or a myocardial infarct which was indicated by electrocardiographic abnormalities which when repeated on the third hospital day was reported as being normal. X-ray studies of the gastrointestinal tract, although not diagnostic, indicated some poorly defined abnormality in the left mid-abdomen involving the small bowel either primarily or secondarily producing mild intermittent obstruction, and at one time suggestive of the presence of a bowel encircled mass.

Death occurred on the twelfth hospital day following a period of a few days in which intestional obstruction became a more prominent feature as evidenced by the statement that a Miller-Abbott tube had progressed into the second portion of the duodenum and then into jejunum. The stomach was decompressed by a Levine tube. Sepsis increased judging from a white blood count of 31,300 reported on the eleventh hospital day. On about the sixth hospital day 50cc of bright red blood were passed, and on the terminal day, dark blood was passed by rectum and drained through the Miller-Abbott tube. Until this time, loss of blood had not been great, for on the eleventh hospital day the hemoglobin was 12.6 gm., the only noataion of this in a rather lengthy resume. For this reason, I would assume that the repeatedly noted elevated white blood counts were not due to re-absorption of hemorrhage into the gastro-intestinal tract. Urine examination upon the seventh hospital day showed a two plus albumin, at which time some N. P. N. retention was present. Whether other abnormalities such as blcod were found in the urine was not stated, so we are forced to assume, possibly erronously, that they were not present.

"Vague", "indefinite", "equivocal", poorly defined", and "suggestive" are terms which I have applied to descriptions given, and four time have I "assumed". In spite of these assumptions, it would really be presumptious of me, because of the rather mild symptoms and non-specific findings, to infer that whatever ailed this man was not serious. But perhaps he died from something else. There is at least one thing certain about this case—he died of something fatal.

I think, in all seriousness, based upon an intestinal lesion accompanied by a very high white blood count, that I can say this case has the aroma of a B. Coli infection. Metaphorically speaking this odor is a figure of speech, but literally it may be a fact—and the evidence presented does indicate the probability of this.

Infection may be primary in which case mesenteric or retroperitoneal abscess, or even a perinephritic abscess could explain the possible bowel encircled mass in the left mid-abdomen. Or a pre-existent tumor mass in the location could become infected via the blood stream or lymphatics, as the result of invasion of the intestinal wall or from the urinary tract.

The initial symptoms and physical findings were uncertain and vague, yet on the second hospital day the gastro-intestinal x-ray findings were probably as definite and elucidating as any described, and had these findings been due to primary abscess formation, definite locallized tenderness, a palpable mass, and probably muscle rigidity should have been present, but they were not. Therefore, I am forced to conclude that infection acted as an aggravating factor in an already pre-existant lesion, resulting eventually in death which may have been due, at least partially, to intestinal hemarrhage.

If neoplasms are to be considered, all tumors, primary or secondary, of the entire gastro-intestinal tract must be included along with mesentreic, retro-peritoneal, kidney, adrenal, pancreatic, lymphatic and adjoining mesenchymal tissues and tumors metastasizing to these areas from distant organs of the body—which is a large order with no certain solution until necropsy.

Instead of clarifying the problem, such cogitation leads only to confusion, so here, a subject peculiar to the discussion of an intra-abdominal lesion will be introduced. As an enthusiastic supporter of Dianetics, the new science of the psyche conceived by L. Ron Hubbard, I have applied my analytic mind assiduously and re-

peatedly in this effort while books, journals and papers stacked higher and higher on my desk, until, according to this principle, I have lapsed into a state of dianetic reverie releasing my reactive mind to bring forth the engrams, which may be termed the past total experiences, to involuntarily assist in the solution of this problem. Dianetics is a remarkable science, having been termed by its author as a "creation which is a milestone for man comparable to his discovery of fire and superior to his invention of the wheel and arch".

I recall only last Monday a verbal postmortem at this table in which it was concluded, but too late, that more consideration of the temperament and professional interests of Joe Bank and less attention to the printed page would have helped to diagnose a case of hepatitis. I have tried this suggested line of approach, and having been personally acquainted with Tom Woodman for very close to 40 years off and on, realized that behind the seeming indefinite nature of this problem, it must fall into a definite pattern, and that the apparent vagueness of it was in reality the essence of it. So, returning to the case, and reviewing in a chronological order the facts as presented, an entirely new picture takes form. A 51 year old factory worker has had at least two attacks of angina pectoris in the past, so has narrowing of the coronary arteries which is allied to, and usually the associate of, preceding cardio-vascular disease; and at this age, we think of arteriosclerosis with super-imposed thrombus formation. An electrocardiogram upon admission to the hospital is indicative of myocardial damage which may result in more thrombus formation with its attendant danger of embolus. Although he had been cautioned to live a moderately restricted life, he removed storm windows which meant exposure and exertion. This marks the onset of his illness which is of a rather mild, ill-defined nature affecting the abdomen; but, as I have pointed out before, was apparently accompanied by a marked general weakness. Subsequently, intermittently, progressive intestinal obstruction with the presence of a probable poorly circumscribed intra-abdominal mass, varying extremely high white blood counts ensued terminating in a toxic death preceded by intestinal hemorrhage. This chain of events and conditions points to mesenteric vascular occlusion with infarction of small intestine. Fortunately, this condition when not incident to local infection or trauma is very uncommon. The mortality is extremely high either because of the state of extremis already present in a patient suffering from severe arrythmias or congestive heart failure with mural thrombus formation, or because the diagnosis and treatment have been too long delayed. Mesenteric vascular occlusion in the beginning may be either arterial or venous, but thrombosis in one type of vessel is generally followed by involvement of the other. The pathophysiologic changes depend upon the degree of ischemia present and the developement of collateral circulation. Primary arterial mesenteric occlusion is caused by emboli originating in the heart, aorta, or pulmonary veins and thrombus formation due to disease of the vessel walls. Venous occlusion is almost always due to thrombosis which may be the result of the venous type. Whatever the type or cause of the mesenteric blockage there are but two clinical pictures. The first is due to a sudden obstruction of a major mesenteric vessel with attendant infarction; the second is one of increasing ischemia, which may either subside or progress to the state of complete infarction, but the picture is identical, no matter how the occlusion developed. Sudden obstruction of of a major vessel in the mesentery is almost always due to advanced cardiovascular disease. Typically, the patients already suffering from a severe ailment of the heart dramatically exhibit abdominal catastrophe manifested by acute pain, nausea, vomiting, and profund shock. In occlusions that develop more slowly there are three clinical stages quite typically exemplified by the case under discussion: (1) a period characterized by hyper-peristalsis with colicky pain and nausea; (2) an interim of intestinal paresis that produces the syndrome of partial intestinal obstruction; and (3) a phase of total intestinal strangulation.

My diagnoses are: (1) Mesenteric vascular occlusion with intestinal infarction. (2) Coronary disease with cardiac intramural thrombi. (3) Arteriosclerotic vascular disease. If the pathologic findings do not agree with these diagnoses, don't condem the pathologist, for even he cannot be right all of the time.

DR. KARL S. HARRIS

This 51-year old factory worker's terminal illness was of about nineteen days duration and the diagnosis which most logically fits the symptoms is that of a mesenteric thrombosis. The original pathology and the ensuing chain of events seem much more obscure.

About one week before he was hospitalized, after removing some storm windows, he is said to have contracted a "cold" but had no chills, fever, chest pain or urinary distrubance but complained only of an indefinite upper abdominal distress. This apparently was quite severe as it caused him to remain in bed. Abnormal gastro-intestinal symptoms were lacking but after a week the pain became so severe as to require a hypodermic for relief and his physician felt he was serious enough to be hosp'talized. His admission findings are of little help—a questionable cyanosis of the lips and finger nails, a short systolic murmur over the aortic area which is not transmitted, electrocardiographic findings compatible with posterior wall inforct or a pericarditis, and a white blood count indicating an inflammatory reaction. He had had two episodes of precordial pain in the past diagnosed as anginal attacks. Gastro-intestinal x-rays showed a narrowed loop of terminal ileum apparently partly encircling a mass over the left side of the lumbosacral junction. Up to this point all of his symptoms could be accounted for on the basis of a coronary accident with pain referred to the abdomen and an ileus. However, on the third hospital day the patient had a spontaneous bowel movement and an EKG that day was normal. Thees findings would certainly be against a previous cardiac infarct. The patient apparently continued to have symptoms as other gastrointestinal x-rays were carried out on the fifth hospital day and I interpret their findings as a delayed passage of barium through the small bowel on the left side of the abdomen. Good results were obtained by enemas following the gastro intestinal series but on the following day the "gas pains" increased and soon after another enema the patient showed signs of shock. The subsequent passage of blood per rectum, the recovery of blood through a Miller-Abbott tube, the increasing signs of sepsis certainly indicate some intestinal lesion and this probably in the small bowel.

Lesions or affections of the small bowel may be claccified as (1) Congenital malformations—Absence of segments; reduplication; Meckel's Diverticulum; mesenteric cysts. Other than Meckel's Diverticulum these can probably be dispensed with because of the age of the patient. The symptoms of a Meckel's Diverticulum are more commonly that of appendicitis or a peptic ulcer. (2) Inflammatory Lesions—Enteritis, non specific; tubtrculosis; typhoid fever, etc. Our patient had no sympaoms to suggest this— no diarrhea, weight loss, etc. (3) New Growths—Polyps; benign lesions; malignant lesions. If any of these were present one would expect more obstructive symptoms. (4) Mechanical Lesions—Inussusception; volvulus; strangulated hernia; obstruction due to adhesions or extrensic pressure. (5) Vascular Lesions—Embolus; thrombosis; aneurism; periarteritis nodosum. (6) Other conditions that might be mentioned only are: basal pneumonia; perforated ulcer; acute homorragic pancreatitis; diverticulitis. The vascular type of lesion involving the bowel seems to best explain the illness of our patient.

Trotter collected in monographic form the reports of 360 cases of mesenteric thrombosis and embolism. Arterial occlusion was found to contribute 60 per cent of the total; thrombosis of the mesenteric vessels, the remaining 40 per cent. The superior mesenteric artery is more frequently concerned in embolism than is the inferior, partially because of its earlier exit from the aorta, but largely because of its more direct continuation from the abdominal aorta. Vegetations on the valves on the left side of the heart are the usual etiologic agents in embolism of the nementeric arteries. Mesenteric venous thrombosis is usually associated with infection in abdominal organs that are tributary to the portal vein. Appendicitis, pelvic infections and strangulated herniae are frequent precursors of the condition. Thrombosis or embolism of the mesenteric vessels most frequently occurs in adults between the ages of 30 and 70. Christopher stated in his textbook that "It is an interesting fact that many cases of mesenteric thrombosis run a fairly mild course, more than a week elapsing frequently before the existence of a serious lesion is suspected".

Our case could well be due to a superior mesenteric vessel thrombosis with extension of the thrombosis and fatal outcome.

Diagnosis: Mesenteric thrombosis.

## DIFFERENTIAL DIAGNOSIS

Dr. Carroll C. Miller: This case seems to be covered with mystery and confusion concerning several of its details. A large part of the discussion concerns itself with the x-ray findings; none of these prove anything, and so far as I can figure out they do not help particularly in making a diagnosis. There are two points that we must ascertain in diagnosing such a problem

the location of the trouble and whether it is intrinsic or extrinsic, in relation to the gastrointestinal tract. If it is intrinsic, is it an infectious conditon or is it a vascular disturbance? If it is extrinsic, has it ulcerated into the bowel so as to provide us with an explanation of the symptoms and signs? We should like to know about the presence of abdominal tenderness and pain. The temperature is not recorded. The pulse essentially normal when the patient first came in, but after shocklike episode on the sixth day the pulse rose to 120. According to the chart before us, five or six days after admission the temperature rose from the normal to 101°F., by rectum and stayed more or less at that level without any appreciable change. There was a concomitant rise in pulse and respirations. So we do not have a definite picture of a rising curve or of an intermittent spiking one. We do not know what the hemoglobin was when the patient was first seen, so that we have no way of comparing the last note of 12.6 gm. with the former condition.

Since so much space in the abstract has been given to discussion of the x-ray films, it might be interesting to see them now.

Dr. Laurence L. Robbins: These films are arranged more or less according to the time relation in which they were taken. I have left out those that are not particularly pertinent. It might be said that perhaps the diagnosis should have been made by x-ray. I am not at all sure about that, however.

This is the appearance at the time the patient entered the hospital, with a large amount of fecal material on the right side of the colon. The next day, probably after enemas, we notice that the colon is fairly well cleaned out and that there is this air filled small bowel. The following day a barium enema was given, and the colon is apparently normal.

These are the loops of small bowel that were described as air containing, and you notice that the barium passes up to a point close to the air-filled loops. This loop of ileum appears to go around something. In the same area you see another loop of ileum that appears to overlie the questionable mass. This loop of bowel is definitely abnormal, I should say. So far as one can tell it is small and probably has some mucosal swelling. I cannot see anything that indicates a definite ulcer. Later films of the small bowel more or less confirm these findings except that there is nothing on which one can make a positive diagnosis of a mass at this time, and the suggestion of the loop of bowel constantly going around somthing is lost. In this area, however, the mucosa again appears abnormal and that is confirmed by this spot film. I have seen similar appearance in the mucosa of the sigmoid in case of periarteritis nodosa. I am not trying to lead anyone astray, but that is the only similarity I have seen.

Dr. Miller: How far away from the ileocecal valve would you say this was?

Dr. Robbins: About 75 cm. An exceptionally large amount of barium passed into the small bowel. I think you can be sure there is definite abnormality of the mucosa of the ileum.

Dr. Miller: Because of the repeatedly high white-cell count and the high percentage of neutrophils, we must assume that something fairly acute in the way of either sepsis or necrosis was going on, and because of a variation during the investigation, at times distention and at times collapse of the bowel, and also because of the terminal episode of hemmorhage into the intestine, we must presuppose that something was going on intraluminally, which allowed blood to escape into the bowel. It will be hard to make a diagnosis that satisfies both these conditions.

There are several things to think of, but we do not have enough evidence to rule them entirely in or out. A sigmoidal diverticulitis with abscess and rupture might account for localized peritonitis and for subsequent bleeding from the bowel. A mesenteric thrombosis would account for the signs of necrosis in the small intestine, accompanied by a high white-cell count and some degree of fever, The chart possibily consistent with that. It would also account for the terminal bleeding episode. It is not likely that this condition is malignant disease. In the first place, there was no previous history. The man was in reasonably good condition; in fact he was described as being somewhat obese. No masses were felt. However, acute abdominal emergencies are sometimes simulated by extensive metastatic lymph-node involvement in the abdomen because of sudden spread or rupture.

An internal hernia with strangulation of a loop of bowel might account for intermittent obstruction and eventual necrosis of thet segment of the bowel, with intraluminal bleeding. I should like to think of the terminal episode as being due to hemorrhage coming from mesenteric throm-

bosis or an internal hernia with strangulation.

The mass that this loop of bowel encircles might be either abscess or retoperitoneal tumor. It is not likely that any retroperitoneal tumor would also so involve the small intestine as to produce this picture. An abscess can involve the wall of the bowel causing obstruction and bleeding, although it is not likely that any retroperitoneal tumor would also so involve the small intestine as to produce this picture. An abscess can involve the wall of the bowel causing obstruction and bleeding, although it is not likely.

A condition that we often forget but which occurs fairly frequently is a Mechel's diverticulitis. In a Meckel's diverticulum there may be bleeding from a peptic ulcer, and it may also become infected with rupture. From the x-ray picture it is possible that an abscess had formed around a diverticulum of the small intestine and that the loop of bowel had become involved in that area; there might still have been a communication into the lumen of the bowel to account for bleeding by rectum and by the Miller-Abbott tube.

I think we must postulate an infectious process in the form of an abscess, with involvement of a loop of small bowel. I think as a best bet I shall say that this patient had a Meckel's diverticulum or a diverticulum of the sigmoid—a solitary one that was not seen by x-ray—accompanied by abscess and hemorrhage through erosion of a large mesenteric vessel.

Dr. Robbins: I am not at all sure I made myself clear to you, Dr. Miller. The small-bowel studies do not confirm the presence of the mass suggested by the barium enema; the films are not characteristic of bowel going around a mass.

Dr. Miller: Nevertheless, there is a loop that is abnormal, either by distortion or extrinsic pressure.

Dr. Robbins: It may be intrinsic disease.

Dr. Miller: Of course, a localized regional enteritis is possible, although it is not commonly seen so far back in the ileum as this. Furthermore, I do not believe that in cases of terminal episode such as this patient had, with almost no cachexia or general disturbance.

Dr. Edward B. Benedict: I do not see why this would not go with regional enteritis.

Dr. Robbins: Would one have acute episodes with it?

Dr. Benedict: No.

Dr. Miller: One does not as a rule see such a massive lesion as this man had. Furthermore, such patients are usually younger.

Dr. Richard H. Sweet: As Dr .Miller clearly brought out, I believe there must have been some necrosis of the loop of bowel to explain this picture.

CLINICAL DIAGNOSIS

Small-bowel obstruction.
Volvulus?
Intussusception?

DR. MILLER'S DIAGNOSIS

Meckel's or sigmoidal diverticulitis, accompanied by abscess and hemmorrhage.

ANATOMICAL DIAGNOSIS

Mesenteric venous thrombosis.
Infarction of small intestine.
Hemmorrhage into intestinal tract.
Peritonitis, acute, fibrinous.
Hemoperitoneum.
Coronary thrombosis, old.
Arteriosclerosis, marked, generalized.

PATHOLOGICAL DISCUSSION

Dr. Benjamin Castleman: At the autopsy we found 3000 cc. of hemorrhagic fibrinous fluid and blood in the abdomen. The entire jejumum and most of the ileum, to within about 150 cc (6 feet) of the ileocecal valve were covered with bluish fibrin. Parts of the bowel were obviously gangrenous, and other parts showed beginning infarction. The cause of this gangrene was a mesenteric venous thrombosis. The arteries and arterioles were uninvolved. There was no periarteritis nodosa. The entire intestinal tract was filled with old and recent blood, apparently arising from the massive necrosis of the small bowel, which had terminally perforated into the abdominal cavity.

Most of the cases of mesenteric occlusion that we see are arterial in type and are caused by emboli. The venous type is uncommon and little is known about its etiology. In contrast to the arterial it does not usually come on suddenly with severe abdominal pain.

Dr. Robbins: Could you find evidence of old infarction?

Dr. Castleman: The thrombi were of various ages, and in some there was definite organization.

The patient also had an old thrombosis of the left descending coronary artery, which accounted for the anginal attacks.



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RESEARCH IN THE SERVICE OF MEDICINE SEARLE

# THE Secretary's MESSAGE

## GRIEVANCE COMMITTEE

Organized January 7, 1951, this Committee chartered a course designed to improve the doctor-patient relationship. Twenty-seven complaints were filed during 1951, one having been withdrawn by plaintiff because of insufficient evidence and another the result of legal action having been instituted. Of the remaining 25 cases, seven were referred to the Grievance Committee of Maricopa County Medical Society for processing and one to a like committee of Pima County

Of the 17 cases investigated, 16 involved "fees" or 94% which is in line with the national average, and one, "medical ethics". A detailed report of each case being compiled and a copy thereof will ultimately be filled with each component society secretary. The Committee received full cooperation from both member and non-member physicians involved, each abiding by its decisions and recommendations.

Experience prompts your Committee to offer the following suggestions for favorable physician consideration:

1. Reduce to a minimum the "waiting time" required of patients scheduled for office appointments. When an emergency arises, endeavor to contact patients before their departure for the doctor's office, rescheduling appointments.

2. Take time to explain patient's condition in understandable language. On first visit or as soon thereafter as practicable, interpret the physician's fees, giving the patient the opportunity to discuss ability to pay.

3. Where surgery is indicated, have complete understanding of fees involved and probable hospital costs including radiology, pathology and anesthesiology. In this latter instance, physician is urged to arrange consultation between the patient and anesthetist prior to operation. The patient should understand that the anesthetist too is an important part of the operating team and may expect to receive a separate bill for his fee.

4. Itemize monthly bills. Break down all laboratory charges. The patient is entitled to know what he or she is paying for. It is sound business practice.

# Editorial

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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.
2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. (See MEDICAL WRITING by Morris Fishbein.)
3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.
4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.
5. Submit manuscript typewritten and double-spaced.
6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.

The Editor is always ready, willing, and happy to help in any way possible.

## THE TREATMENT OF TUBERCULOSIS

SECTION I

A survey and summary of the current methods used to treat tuberculosis is appropriate at times—but almost mandatory now after the changes which have occurred in the past 3 to 6 years.

It is presumptive to attempt such a chore in less than a volume, but the information must be condensed and packed into two editorials for *Arizona Medicine.*

Numerous items in therapy have recently been modified, and even general principles have been changed. Resection and chemotherapy, for instance, were indefinite hopes until the past few years, yet they have changed the whole program of treatment.

*Diagnosis* can almost be called a part of treatment, since case-finding is the method by which the tuberculous person reaches medical care. The free use of x-ray methods, both in private practice and in mass surveys, is far more efficient than the former 'symptomatic diagnosis'—tho its efficiency is only as great as its usage. It should be commented that mass surveys profit not only the patient, but his contacts, the physician, and the roentgenologist.

*Diagnostic methods* are also recurrently used to determine the status of disease, and are therefore an integral part of treatment. Ordinary films, grids, sectional films, sputum concentrates, gastric aspiration cultures, 'resistance' tests are all valuable—and it is notable that several of these are relatively new.

*Isolation and segregation* are methods of managing tuberculosis, and they provide situations in which therapy can best and most safely be applied. There is no really good substitute for sanatorium care. Rest and exercise can be supervised, chemotherapy can be easily given, collapse therapy can be used as and when needed, contacts are protected, medical observation can be closer, etc. etc. Infectious disease precautions (aseptic technic) can be applied by trained tuberculosis nursing—and most of the literature on that subject has been written between 1939 and 1949. (These comments on segregation are made with the knowledge that such care is not regularly used or possible at present in Arizona. Patients often prefer to live at home; rest-homes are becoming fewer; and organized sanatoria can care for only a small portion of the crop).

*Rest* is still a major part of therapy. It has been somewhat displaced by additional methods, but it is combined with drugs, collapse, and

resection. Rest and time may perforce be the chief methods in some cases. The physical basis of rest is to decrease the volume and mobility of the lungs; the objective is to rest the body, and therefore the chest, the lung, and the lesion. There is evidence that *modified* rest, or less than absolute rest in bed, may be better for the patient's circulation, easier on the patient's chest, and just as effective in healing the disease.

*Symptomatic treatment* need not be mentioned in detail. There are few new drugs for the relief of the usual complaints. The chief progress has been in the cure of most symptoms and complications by the use of chemotherapy. Streptomycin and PAS have minimized cough, sputum, wheezing, pain, anorexia, diarrhea, effusion, empyema, and so on thru the systems of the body. One actually need only to try and avoid or control the symptoms from the drugs.

*Supportive therapy* has changed slightly, but is now more rational. Tuberculin, calcium, et al., are either harmful or not indicated. Diet must include sufficient protein, rather than the simply fattening substances. There is new evidence that, whereas all vitamins are required, vitamins A and C are more valuable in large amounts. About 25,000 units of A are needed, possibly in a special form, and 1 to 5 grams of C are sometimes indicated The effect of excess vitamins may be exerted by improving the cellular resistance to the tubercle bacilli.

*Suppressive therapy* is the term used to describe treatment with the several specific drugs now at hand. The exact modes of action are not certain but they suppress the growth of the bacilli so that the body tissues may kill or surround them, or repair the damage they have caused.

Streptomycin and its cousin dihydrostreptomycin are the most valuable suppressive drugs available, and are equally effective. They are given parenterally, are helpful in all forms of tuberculosis, but are especially effective in lesions of the mucous membranes. The current preparations are relatively pure and innocuous. The hazards may include specific reactions (which are rare), toxicity, and the production of resistance in the bacilli. The controversy over the relative toxicity of the two drugs is unsettled; it is reported that a late deafness may follow the use of dihydrostreptomycin (the sulfate as well as the hydrochloride), and if this proves to be so the drug should be discarded. The bacilli may become resistant (less sensitive) to the streptomycins as their use continues, and the degree of resistance (which is usually permanent) depends on total dosage rather than time, and on the associated use of other drugs. Resistance is a serious hazard, tho not as common as first reported, and recent reports indicate that therapy may be continued with some benefit when cultures show considerable resistance. The question of dosage is nearing solution, wih one gram being given every 2 or 3 days for chronic pulmonary and most other lesions. Some clinicians prefer daily doses of ½ to 1 gram during an acute or progressive episode, and pediatricians believe that streptomycin must be given intra-thecally to cure (or prevent) meningeal disease.

PAS is the set of initials loosely used to describe both Para-amino-salicylic acid and its sodium salt. PAS has been in use only three years in the United States, but it is agreed that the drug is valuable. It is believed that the sodium preparation is much better tolerated by the intestinal tract, either in solution or in enteric-coated granules. The chief toxicity is a direct irritation of the gastro-intestinal tract, but nerve symptoms or a benign rash may occur. Specific reaction to the drug occurs in about 3 per cent of those who take it, produces a typical syndrome, and can be relieved by desensitization. Bacillary resistance to PAS may follow many months of use, but it tends to fade on discontinuance. PAS has a definite intrinsic action against tuberculosis, with a frequent reduction of symptoms and an arrest of acute activity and mucosal lesions. Its greater importance, however, is in combination with SM for effect, and in preventing the development of bacterial resistance to SM by some as yet unknown means. It has been shown that 100 grams or more of SM can be given in combination with PAS eith the emergence of almost no resistance. Further, the use of PAS daily is of greater protection than when it is given only on the days of intermittent SM dosage. Four or 5 grams three times a day seem sufficient, tho such a dose is more convenient than it is certified to be exactly enough.

TB-1 is a third anti-tuberculosis drug, but it is of the least value and scantily used. It is a thiosemicarbazone, an import from Germany (where it was called 'Conteben', etc.), and it is manufactured as TIBIONE in America. It

is often toxic in full doses (200 mg.), often poorly tolerated, and it has only a moderate effect on the most susceptible lesions. It is reserved for cases which cannot take SM, and it should be given in small doses under regular laboratory control.

Neomycin, viomycin, mycomycin, terramycin, et al., are either too toxic or too ineffective. There are several other drugs and combinations being tried thruout the world, but hopes should not be raised until they are approved by reputable medical societies. The American Trudeau Society, for instance, has a research and therapy committee which will investigate and report on any likely drug so quickly that the information would precede an available supply, and almost beat the announcements in the public prints.

*(Section II, on collapse and resection therapy, will follow in a future issue).*

# TOPICS OF *Current Medical* INTEREST

## RX, DX, AND DRS.

By GUILLERMO OSLER, M.D.

The vogue of 'TRACHEAL LAVAGE' in potential cases of tuberculosis doesn't sound solid or logical or physiological. . . . Instilling fluid into the bronchial tree, where it can carry secretions to new sites, where it produces a cough, seems unnecessary—especially when gastric aspirations can be done. . . . An analysis of the method should be available soon. So far only the pioneers and zealots have spoken, and they could not be called unprejudiced.

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**The real value of a new treatment for seborrheic dermatitis of the scalp (dandruff) should also be estimated. . . . A 2.5 per cent solution of SELENIUM SULFIDE in a detergent has been said to clear 80 to 95 per cent of the two conditions. . . . Physicians in institutions often hear such small complaints, and really know how common they are. They could use new therapy.**

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'Postgraduate Medicine' (and 'Time' Magazine) tell about the better TREATMENT OF DOG-BITE. Dr. R. T. Vinnard of Fresno, Calif., fumes at the use of the archaic cautery. Everyone wants to do enough, so too much is done. . . . Cleansing with soap and water is best, enough, and sufficient even when rabies is a possibility. . . . O.K. Now to convince the patients.

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**'Medical Economics' makes a good story out of the style and motives of FIVE LAY MEDICAL WRITERS. . . . The group includes DE KRUIF, of course. He is a Ph.D., the champion of 'souped-up' medical reporting; he doesn't give a darn what people think, but he seems to be mellowing. . . . STEVEN SPENCER has been mentioned in this column, and has written for the Sat. Eve. Post for 6 years. He wrote the first story on penicillin, won writing prizes, went to Harvard to study several basic science subjects. . . . GREER WILLIAMS writes conscientious articles for several journals, sometimes works with A.M.A. support. . . . ALBERT DEUTCH is a disturber, and proud of it. He hopes always to be the impassioned foe (racial bias, quacks, poor medical care of insane, etc.). He writes for a broad field, but has written books on medical history. . . . T. D. RATCLIFF dreams up some of his stories, gets leads from medical journals for others, and gets tips from research groups and drug houses for most of his leads. In this last category was 'Dervisul', a potential cure of polio, which he reported and readily admits was a dud. (It was referred to here, and noted to be a dud a year ago. However, we BOTH could have been right, and ONE of us would have become famous).**

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STEVEN SPENCER of the Sat. Eve. Post deserves another pat for his handling of "Food Poisoning Can Get You, too" . . . He points out the frequency of mass attacks (400 reported per year, affecting 9,000 persons—probably only 10 per cent of the actual episodes). . . . He mentions the most commonly contaminated foods (meat, 35%; filled bakery products, 35%). . . . He stresses the frequency of staphlococcus intoxication over botulism, mushrooms, salmonellae, etc., and describes the huge growth of the bacteria in food which is allowed to remain at room temperature for a few days or hours. The toxin from the bacteria is the reason for its quick action and lack of infection. . . . 'Case-reports' make the article very readable.

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**The Feighner & Co., manufacturers of surgical equipment, presents a STERILE OPERATING LAMP which can be precisely focused on an operative area. . . . It consists of a source of light, and a lucite bar which is interchangeable and may be sterilized. It is also spark-proof and cool.**

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A columnist (J.F.) for the Ohio State Medical Journal calls attention to a MODERN MEDICAL HAZARD to children. . . . In days of yore medicines had to be bitter to be popular. Nowadays the drug houses compete to produce palate-tickling and provocative drugs, especially for the

small fry. . . . The hazard is present in the possibility of over-dosage—too much of a good thing.

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**The title of an article in the August 'Annals of Surgery' could be misleading to a chest specialist. It is called 'EMPHYSEMATOUS CHOLECYSTITIS'. . . . Retterbush, et al., report 21 cases of air in the gall-bladder, or in its wall, associated with acute inflammation. Symptoms are similar to, but x-rays different from, ordinary acute cholecystitis. A gas-producing organism, usually of the clostridium group, is the cause. Surgery is the recommended therapy, and quickly.**

---

The Medical Annals of the District of Columbia says that AVOIDANCE OF MALPRACTICE depends on 'Three Little Words'—knowledge( diligence, and judgment. . . . If one has and uses 1. sufficient knowledge and skill, 2. due diligence, and 3. best judgment, there is no chance of a guilty verdict in lawsuits.

---

**Two groups of surgeons (with Thorek and Dennis) have performed VAGOTOMIES on a total of 63 cases of idiopathic ULCERATIVE COLITIS. The results are said to be good, with 80.9 per cent of Thorek's cases showing a favorable result. . . . Drs. Bargen, Lahey, and Palmer (who have seen dozens of therapies come and go) are not enthusiastic about the logic or effects. They, and we, must wait and see. . . . Come to think of it, Bargen is usually enthusiastic.**

---

'Medical Economics' has survived the status of medical PROFESSIONAL COURTESY, and very well too. It varies in different areas, probably, but another modifying factor is the amount of the charge. . . . A medical colleague and his wife are invariably extended 100 per cent courtesy at any cost. Eighty-five to 95 per cent of office aides are exempt, and the remainder pay reduced charges. More than 50 per cent of nurses pay no fee, and most of the others pay little. More than a third of the dentist patients pay nothing, and many more pay less than full fee. Druggists also receive some 'courtesy', tho less than dentists.

---

**The medical director of a large western tuberculosis sanatorium makes two interesting comments. . . . Patients often LEAVE AGAINST ADVICE and their number varies inversely with the number of physicians on the staff. (Few physicians, many AWOLS). . . . The DRUG BILLS vary directly with the number of physicians on the staff.**

---

ANTIBIOTIC NOTES,—ACTIDIONE, once reported as promising in fungus infection, is reported to have cured a case of cryptococcus meningitis (torulosis).

German obstetricians tell of a synergism which is more effective in puerperal infection—PENICILLIN AND STREPTOMYCIN.

TERRAMYCIN gains in stature in reports on gonorrhea, a wide range of urinary infections, primary atypical pneumonia in infants, pleuropneumonia-like infections, mouse pinworms, and acute intestinal amebiasis.

There are few more certain ways of disproving the value of a drug than by having the condition develop while the drug is being used. . . . We have recently seen a case in which CHLOROMYCETIN was being used by mouth for a specifically sensitive staphlococcus empyema. The patient developed a SERUM HEPATITIS during this period, probably from a series of transfusions given 7 or 8 weeks previously. . . . The lack of prophylaxis confirms recent reports on the use of this drug, as well as of aureomycin.

---

**The reduction of BACTEREMIA AFTER TOOTH EXTRACTION has become easier as the modern drugs become available. The 'mycin' drugs have the advantages of low antigenicity, oral dosage, lower cost, and (it is now reported) greater efficiency. . . . Dr. William S. Middleton of Wisconsin, recent president of the A.C.P., once said that it would soon become criminal to pull teeth without the protection of chemotherapy. Now seems to be the time, especially in cases with lesions of the heart valves. . . .**

---

One of the leading authorities and authors on THE USE OF SULFONAMIDES was Dr. Wesley Spink of Minneapolis. He summarized the 'Present Status of Sulfonamide Therapy' last year, and it is still worth a paragraph. . . . The decline in use has been due to 3 causes,—serious side effects (especially renal) and hypersensitivity; production of bacterial resistance; and a narrow range of bacterial activity, now widened by the antibiotics. . . . There are quite a few conditions for which the sulfonamides (now limited to sulfadiazine and sulfamerazine) are indicated. 1. Meningococcic infections (by mouth, both drugs); 2. Bacillary dysentery; 3. Mild respiratory infections (unless bacterial study says otherwise); 4. Urinary tract infections (especially for chronic gram-negative involvement); 5. Ulcerative colitis (with the poorly absorbed preparations). . . . The PROPHYLACTIC USE is justified for rheumatic fever, epidemic meningococcic meningitis, and urinary tract infection during catheterizations. (Antibiotics are used in other similar situations, and in some of these). . . . SULFONAMIDES PLUS ANTIBIOTICS are helpful in influenzal meningitis (sulfadiazine, streptomycin, and antiserum); pneumococcic meningitis (penicillin plus a sulfonamide); Pseudomonas GU and skin infections (streptomycin and a sulfa); brucellosis, Friedlander's, and plague may or may not be best treated with SM and a sulfa. . . . As in the past these rules are subject to change at short intervals.

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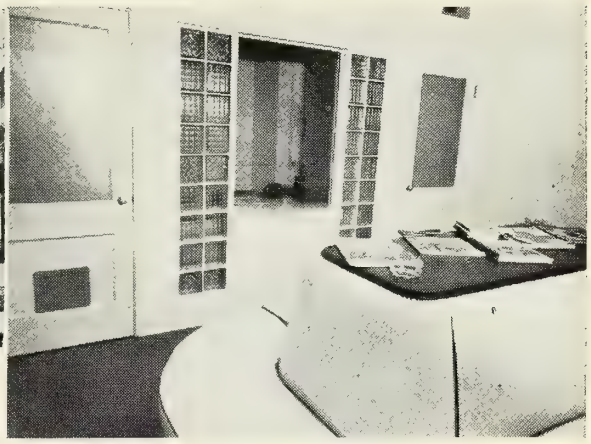
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# SOBRIETY TESTS

Edward L. Breazeale; R. L. Whitlow
James Wyckoff
Tucson, Arizona

There has been a recent increased interest in the various tests for intoxication, especially since the state has adopted the Standard Traffic Code. A great deal of discussion has gone on, both for and against these tests and consequently, a great deal of misunderstanding has come about regarding their reliability.

There are several types of chemical tests for sobriety available today. Probably the best known of these are the blood alcohol test, where a sample of the suspect's blood is drawn and the actual alcohol level determined by distillation, and the "Drunkometer" test of Harger. Urine may also be used in the first test. In the Drunkometer the suspect is requested to blow up a balloon and the air is passed through a solution of acid permanganate, which is decolorized by the alcohol present. By knowing the volume of air necessary to decolorize the solution the amount of alcohol present in the blood can be accurately calculated. There are several other tests involving breath, the better known being the "Alcometer," and the Forrester "Intoximeter."

All of these tests, including the blood and urine tests, depend upon the fact that alcohol in a person's body is distributed throughout the bodily fluids in a uniform pattern. This is true of the level in the blood, urine, saliva and perspiration. Consequently, the expired air will be in equilibruim with the blood and the alcohol in the breath will be in proportion to that found in the blood itself. The basic chemical principle behind all the tests is the same, the reduction of some oxidizing substance by the alcohol, which goes over to either acetic anhydride or acetic acid. Potassium permanganate and either sodium or potassium dichromate are the most common oxidizing agents and indicators used in these tests.

The basic standard of reference is the level of alcohol per unit volume in the blood, spinal fluid or urine of the suspect In the case of these samples a known quantity of protein free extract is distilled into standard dichromate solution and the amount of dichromate reduced, determined either by titrating the excess of dichromate or using a photolometer and determining it colormetrically. This method is direct and accurate, except that the presence of methyl alcohol will act the same as ethyl alcohol. However, in the eyes of the law the suspect is still 'under the influence," regardless of which alcohol is present, if the concentration is above 0.15%. The method does have some drawbacks. Blood samples are not always easy to obtain and laboratory facilities are not always available and the method of determining the alcohol level in the blood is not standardized sufficiently so as to eliminate errors in the performance of the test. A blood sample if it is not to be analyzed immediately should be kept cool and be excluded from air. This may be accomplished by either filling the sample vial full or adding a lightweight mineral oil to fill the vail. This prevents the alcohol from becoming oxidized by exposure to the air and consequently giving low results.

The "Drunkometer" has received a great deal of attention lately, as have the "Alcometer" and "Intoximeter." These methods are all breath tests and have been adopted as standard in many of the states. They have some definite advantages over the blood tests, chiefly that a trained chemist is not needed to run the test and a chemical laboratory is not required. Any law enforcement officer can easily learn how to run them after some instruction.

The "Drunkometer" uses a cross check in that it not only measures the volume of air directly by water displacement but also by weighing the amount of carbon dioxide in that volume of air. After the air has passed through the permanganate solution, decolorizing it, it then passes through a calcium chloride tube to remove any moisture and then through an ascarite tube that absorbs all carbon dioxide. The increase in weight of the ascarite tube is determined by means of an analytical balance. Knowing the amount of carbon dioxide the volume of alveolar air can be determined and consequently, the percentage of blood alcohol. The Harger Drunkometer furnishes tables so that the percentage of alcohol can be read directly from the weight of carbon dioxide. The test has the advantage of being easily run and is quite accurate. Each test is cheap, but the equipment is relatively expensive (about $500 complete) and bulky to transport.

Contrary to common beliefs there are very

1. Asst. Agric. Chemist, Univ. of Ariz., Tucson.
2. Captain, Southern District, Arizona Highway Patrol, Tucson.
3. Patrolman, Southern District, Arizona Highway Patrol, Tucson.

*from among*
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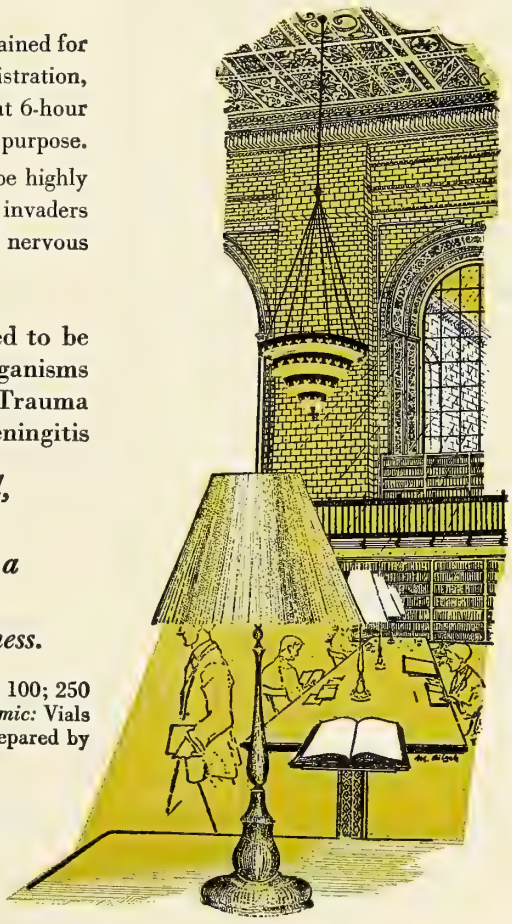
Measurable serum levels are maintained for as long as 12 hours after oral administration, oral doses of 5 to 10 mg. per kilo at 6-hour intervals being adequate for this purpose.

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few debilities that will give false readings. Diabetis will not cause a reaction in the tube as is commonly thought. Certain types of medicines will cause the body to produce reducing bodies. Some of the local anesthetics used by dentists are likely to cause false positive tests. Therefore, it is extremely important that a suspect be questioned as to the possibility of his being under a doctor's care or whether he has been to a dentist that day. If he has, it is advisable to use a blood test for checking on the sobriety of the suspect.

The breath tests have been used for a number of years throughout the United States and parts of Europe. They have been subjected to numerous court trials and have been upheld by the highest courts in our country. If properly conducted they are accurate and acceptable as evidence, and there is no reason why the tests should not be properly run and widely used.

The prime purpose of all chemical tests for drunkeness is to determine if the suspect is "under the influence." This works both ways, it can either help to convict or it can help to clear a person. Often times it does the latter. Following an accident a person may have received an injury with the result that he will have impaired speech and movement and will appear to be intoxicated. Often times even an expert doctor of medicine cannot distinguish clinically, but the chemical tests can and do tell the difference. This type of case is as important to the officer as is the true inebreate; he is as interested in clearing the innocent as he is in convicting the guilty. Recently a suspect was examined by the Drunkometer and found to contain near the fatal concentration of blood alcohol. His stomach was pumped and almost a quart of whiskey removed. In this case the man's life was saved by use of the test. It is plain to see that the slogan "get your man with the chemical test" is not true, as the use of these tests can either clear or convict a person if impartially done.

It has been recommended by the National Safety Council Committee on Tests for Intoxication and the American Medical Association Committee to Study Problems of Motor Accidents that the effects of alcohol in the blood in concentrations below 0.05 per cent are insufficient for a diagnosis of "under the influence of alcohol." Concentrations between 0.05 per cent and 0.15 per cent are usually associated with a loss of some of the clearness of intellect and self-control that a person would ordinarily possess. However, quantities of alcohol over 0.15 per cent constitute prima facie evidence of "under the influence."

By "prima facie" is not meant absolute, but rather "true until proven otherwise." It is up to the suspect to prove he is not "under the influence."

The Purves-Stewart tables, as given in the Edenburgh Medical Journal (44:633, 1937) as shown on following page.

The question often comes up as to the individual tolerance for alcohol. Individuals will vary in their tolerance or "ability to carry their liquor," yet that has to do with their rate of assimilation and not necessarily alcohol content. The figure of 0.15% is an extremely fair figure and represents a level where most people's reaction time will be reduced.

Recently the writers in co-operation with the local Arizona Highway Patrol (Capt. R. L. Whitlow and Ptl. James Wyckoff) has been developing a rapid portable test for intoxication. It involves the use of saliva and a reducible agent. The suspect is requisted to give the operator some saliva in a small paper cup. One-half cubic milliliter is then added by a calibrated pipette to a standard test solution. The sample vial is held in the hand for 4 to 5 minutes and compared to known standards. In preliminary tests it has proven very accurate and rapid. The cost per test is only a fraction of a cent and the complete kit is about the size of a small box camera.

The use of chemical tests for intoxication is no longer in the experimental stage. It is a real help to the law enforcing officer and should be used. "Although a single test is sufficient as evidence, it is strongly urged that at least two types of tests be performed. It is recommended that the breath test be used as preliminary and if the case warrants, a blood or urine be collected for confirmation analyses." The latter statement was taken from a report of the National Safety Council Committee on tests for Intoxication dated January, 1951.

| | | |
|---|---|---|
| 500 to 400 mg. per 100 cu. cm. (decilitre) of blood | (.50 to .40%) | Coma ("Dead drunk"). Sometimes fatal |
| 350 mg. | (.35%) | Stupor; inability to stand or walk. |
| 200 mg. | (.20%) | All cases (i.e.) (100 per cent) show marked inebriation with psychic and speech disorders; also motor symptoms (cerebello-pontobulbar). |
| 180 mg. | (.18%) | 80 per cent of cases show clinical signs of moderate intoxication, including diminution of control, mental confusion and disorders of co-ordination. |
| 160 mg. | (.16%) | 66 per cent show similar clinical signs. |
| 130 mg. | (.13%) | 50 per cent show similar clinical signs. |
| 100 mg. | (.10%) | 33 per cent show slighter pathological symptoms; talkativeness, euphoria and abnormal confidence. |
| 80, and downward to 30, 20 and 10 mg. | (0.03, 0.02, 0.01%) | Show no gross clinical abnormality of behavior. |
| 80 and downward to 30, 20 and 10 mg. | | But toward the higher figures careful testing reveals delayed reaction time (0.4 second instead of 0.1 second) followed by hasty acceleration when driving a car, together with diminuation of judgment, attention and control; also loss of efficiency in finer performance tests. The individual is more genial and has fewer inhibitions. (*in vino vertias*) |
| 0 mg. | | As in the normal abstainer ,but also in many cases of delirium tremens. |

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## 1952 SCIENTIFIC ASSEMBLY AMERICAN ACADEMY OF GENERAL PRACTICE

All eyes shift eastward to Atlantic City, New Jersey, where the 1952 Scientific Assembly of the American Academy of General Practice will be held March 24-27.

Dr. R. B. Robins of Camden, Ark., will be installed as new president of the Academy succeeding Dr. J. P. Sanders of Shreveport, La. Other officers for the current year are Dr. Fred A. Humphrey of Fort Collins, Colo., vice-president, Dr. William B. Hildebrand of Menasha, Wis., chairman of the Board of Directors, and Dr. U. R. Bryner of Salt Lake City, Utah, treasurer. Dr. J. S. DeTar of Milan, Michigan, is speaker of the Congress of Delegates.

On the Monday, March 24 program, Dr. John W. Cline, president of the A.M.A., Leonard E. Read, Louis B. Seltzer, and Rollen Waterson will discuss the relationship of the general practitioners and the public. Drs. O. Spurgeon English and Richard Kern are teamed up for important lectures on the "problem ages."

The question of "problem drinking" will be featured in a symposium on the Tuesday morning program. Mr. W. G. W. from Alcoholics Anonymous, Dr. Harold Lovell, and Seldon D. Bacon, Ph.D., will give lectures. Academy member Andrew S. Tomb will be moderator at a forum session with Mr. W. G. W., Drs. Lovell and Bacon, Rt. Rev. Clinton S. Quin, D.D., George H. Gehrman, M.D., and Milton G. Potter, M.D., taking part. Lectures on obstetrics will be given by Drs. Robert B. Greenblatt, George J. Thomas, and M. Edward Davis. Dr. William Dameshek will speak on Anemia to complete Tuesday's program.

Six outstanding authorities will present Wednesday's program on Progress in Medicine. They are Drs. John C. Krantz, Jr., Julius H. Comroe, Wallace M. Yater, Cyril M. Macbryde, Hans Selye, and Jerome W. Conn. These six will make up an "Information Please" session with Dr. Harry Gold as moderator.

The final Assembly lectures will be on Orthopedics Thursday morning with Drs. William T. Green, J. Albert Key, David M. Bosworth, and Rex Diveley in charge.

A record attendance of 4,000 persons is expected at the Assembly's social highlight, the banquet, which will be held Wednesday evening. All sessions of the Assembly, the exhibits, and the banquet will be held in Atlantic City Convention Hall.

———o———

## BOOK REVIEW

Standard Nomenclature of Diseases and Operations—4th Edition Edited by Richard J. Plunkett, M.D., Editor and Adaline C. Hayden, R.R.L., Associate Editor.

4 Illustrations; 1,034 Pages; January 2, 1952. $8.00.

This 4th edition of the standard guide to disease and operation recording for medical record librarians and physicians has been completely revised and brought up-to-date in keeping with medical progress.

Code numbers for acute and chronic conditions are made consistent, new heart diagnoses are included, diseases of the Hemic and Lymphatic systems are revised to conform to accepted terminology, the dental and tuberculosis sections are enlarged, and the section on operations includes new operative procedures used in skin grafts and cardiac surgery. Also, the supplementary terms are placed in one section and the disease and operations indexes are placed consecutively in the book.

In addition to these revisions, an International Statistical Classification of Diseases, Injuries and Causes of Death is included. These code numbers are cross-referenced to the "Standard" code numbers.

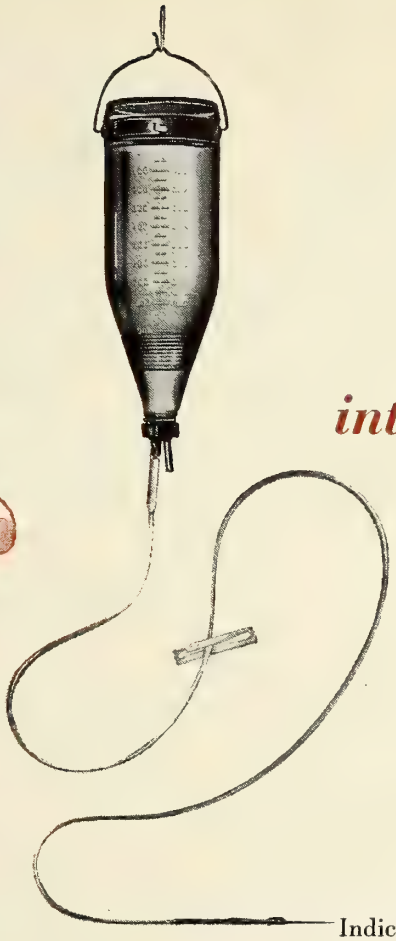
This 4th edition is the result of three years of extensive work by an editorial advisory board and 21 committees representing each of the individual or specialty sections of the book.

CONTENTS

Preface, Introduction, Instructions to Medical Record Librarians, Schema of Classification, Nomenclature of Diseases, Nondiagnostic Terms for Hospital Records, Supplementary Terms, Operations, Introduction; Classification of Operative Procedures, Nomenclature of Operations, Anesthesia Section, Disease Index, Operation Index, Appendix—Code Numbers of International List of Causes of Diseases, Injuries and Causes of Death Cross-Indexed to "Standard" Code Numbers.

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## HOSPITAL ACCREDITATION COMMITTEE MEETS

The first meeting of the new joint commission for the accreditation of hospitals in the United States and Canada was held at Chicago's Drake Hotel on Saturday, December 15. It was primarily an organizational meeting.

The joint commission will be composed of 20 members since it also will represent the Canadian Medical Association. Making up the commission will be six representatives each from the American Medical Association and the American Hospital Association and three each from the American College of Surgeons and the American College of Physicians. The two members from Canada are Dr. E. K. Lyon, Ontario, representing the Canadian Medical Association, and the Hon. John Melton George, K.C., Manitoba, Canadian member of the American Hospital Association.

At the first meeting, a screening committee was appointed to process those who are being considered for the job as executive director of the commission.

Dr. Gunnar Gundersen, La Crosse, Wis., a member of the A.M.A. Board of Trustees, was elected chairman of the commission: Dr. Roy Sloan, Chicago, of the American College of Physicians, was named vice chairman, and Mr. Steward K. Hummel, Joliet, Ill., of the American Hospital Association, treasurer.

NOTE: Reprint, AMA Secretary's Letter No. 204—1-2-52.

## JOURNAL SHOWS UP APATHY IN VOTING

Every doctor should read the editorial, "Voting Privileges," which appeared in the December 29 issue of The Journal.

It showed up the apathy of the citizens when the elections roll around.

The editorial cited one source which estimated that less than 50 per cent of the qualified United States voters exercise their privilege of voting in national elections.

According to a survey made by a Poll Tax Committee in Dallas, the heaviest vote among professional groups was found in the legal profession, but even in this group only 38 per cent of the lawyers voted in 1948. The poorest showing made by professional groups was in the nursing profession, in which only 12 per cent voted. In the medical profession, 36 per cent of the physicians voted. The Dallas Morning News said:

"It is the doctor, the lawyer, the engineer who bemoan the threat of socialism and burdensome debts. The doctor who fears socialized medicine and does nothing to combat it is legion. The Dallas poll merely proves, locally, a national picture that is pitiable."

Dig out your 29th issue of The Journal and read the editorial. It will be worth your while and will set you to thinking that "socialism can easily come to this country without a vote from the people; it can come by default."

NOTE: Reprint, AMA Secretary's Letter No. 204—1-2-52.

## HILL-BURTON GRANTS STATE OF ARIZONA

Division of Hospital Facilities, FSA, reports that as of November 30, 1951, no new projects had been approved for Hill-Burton grants in the State of Arizona.

Status of all Hill-Burton hospital construction in this state is as follows:

COMPLETED AND IN OPERATION: 5 projects at a total cost of $2,540,593, including federal contribution of $732,562 and supplying 195 additional beds.

UNDER CONSTRUCTION: 3 projects at a total cost of $6,628,089, including federal contribution of $1,900,000 and designed to supply 426 additional beds.

APPROVED, BUT NOT YET UNDER CONSTRUCTION: 0 projects.

NOTE: Monthly progress statement of the Washington Office of the American Medical Association, December 17, 1951.

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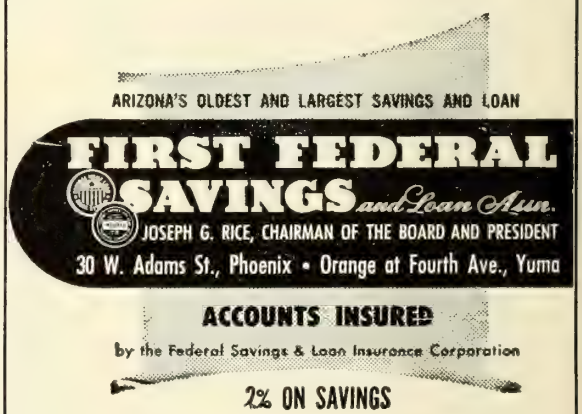
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## AMA LOS ANGELES MEETING

The Fifth Annual Clinical Session of the American Medical Association, held in Los Angeles December 4-7, was an outstanding success in attendance and in interest in the program. The attendance exceeded that of any of the previous Clinical Sessions. The number of physicians who had registered by the final day of the meeting was over 4,400. Registration of physicians from Arizona as of December 6, 1951, was 39. Swelling this attendance were more than 4,600 guests, including residents, interns, medical students, nurses, and technicians. While the program had been carefully arranged to provide special interest for general practitioners, there was a sufficient variety of subjects and activities to appeal to others than physicians. The scientific and technical exhibitors were pleased with the attendance and interest shown by those who attended the meeting.

There were clinical demonstrations and lectures on more than 300 subjects, a scientific exhibit of 90 or more displays and demonstrations, and motion pictures and television embracing many topics. Medical and television history was made when colored television was first shown on a coast-to-coast hook-up. Originating in Los Angeles, this demonstration was seen by medical audiences in this city and simultaneously in Chicago and New York. While the possibilities of television for teaching have long been discussed by physicians interested in visual education, no transcontinental arrangement of colored television had ever been attempted before. The results demonstrate beyond question the potential value of this medium for education.

Numerous sessions were devoted primarily to pediatrics, dermatology, diseases of the chest, cardiovascular diseases, obstetrics and gynecology, general surgery, general practice, urology, industrial medicine and surgery, eye, ear, nose and throat, radiology, anesthesia and pathology, traumatology as related to civilian defense, and medical blood banks. Other sessions included general lectures of interest to all physicians, which were presented by widely known speakers.

By action of the Board of Trustees, an appropriation of another half million dollars to the American Medical Education Foundation, which has been raising funds within the medical profession during the last year for the nation's medical schools, was made.

Among the visitors to the House of Delegates of the American Medical Association was Donald R. Wilson, Clarksburg, West Virginia, national commander of the American Legion. In an inspiring address he paid tribute to the American physician and his determination to provide basic answers to the problems of medical care facing the people of this country. He warned that the medical profession must be the watchdog of American health and that the American people must look to it for leadership, planning, and results. He said in part: "You may depend on us to carry our full share of what is primarily your battle. We shall do it not only for your good but also for the good of the American people. We see and understand your problem and are prepared to render whatever service we can."

# Woman's AUXILIARY

## "WHAT'S NEW IN THE COUNTY AUXILIARIES"

This year the Maricopa County Medical Auxiliary voted to sustain Nurse Recruitment as its project.

When the various state nursing associations heard of this, they, with their similar aims, joined forces with us. We hope that with this combined strength every facet of the community will be reached. Some time in March when all the plans are laid, we expect to contact business houses, schools, organizations and hospitals to secure their aid in getting new recruits. Part of this program will be the showing of films, speakers, programs, and all of the devices possible to show the tremendous need as well as the attractiveness of the job of being a nurse.

Along with filling this need, the women of our auxiliary provide manpower for many community services such as Red Cross, sale of T.B. stamps, Polio work and drives, Community Chest, and our P.T.A. Visiting Nurse Service provides a good example of this. Two members

spend a minimum of three hours each a week to help in mending, clerical work, making supplies or anything that is needed at the time. The needs of the visiting nurses are so great that it isn't unusual to find our members typing or mending for their service in their own homes.

No account of our service to the community or the Medical Society would be complete without a mention of a job well done by Mrs. George Enfield and other members of our group who helped to start a new Medical Auxiliary—Graham County. Congratulations! We hope you have a long and successful career in service before you.

Mrs. John S. Kruglick
Publicity Chairman, Maricopa County

This has been a very satisfying and interesting year thus far for the Pima County Auxiliary.

The main project for the year has been the radio program, "Healthy Living in our County." I will not attempt to go into that subject now, as it will be reported on and explain in detail in the March issue of *Arizona Medicine*. However, I would like to say that it is a success and something that the Auxiliary can be proud to have sponsored and been responsible for.

The Auxiliary was asked to have a representative on the Council of Social Agencies, which we were happy to do. Our work with and through them has been most gratifying.

The monthly programs have been exceptionally good. At the membership luncheon in November, a humorous skit was given which portrayed the role played by the doctor's wife in the home and community, in three different episodes dating from 1900 to 1950.

The January meeting which was on Legislation was also given in the form of a skit with the members taking all the parts, even acting as inanimate objects. The process of how a bill is brought before the house and senate and becomes a law was acted out in pantomine with a narrator explaining the different steps.

Lack of space forbids me going into more detail about all of our activities, but I do want to say that I think the Auxiliary is accomplishing more in its relationship with the public than ever before.

Mrs. Hiram Cochran
Publicity Chairman, Pima County

It was the pleasure of the new auxiliary group in Safford, Graham County, to meet on December 4, 1951 and witness the installation of officers by members of the State Auxiliary. Mrs. Royal E. Rudolph, president of the State, conducted the ceremony assisted by Mrs. William Schoffman, and Mrs. George S. Enfield. They presented the group with the aims and projects of the State and National Auxiliary and suggested fields of endeavor which could be started by a young and active auxiliary.

The officers chosen for the Graham County Auxiliary are: President, Mrs. Frederick W. Knight; vice-president, Mrs. Noel G. Smith; secretary-treasurer, Mrs. Donald E. Nelson.

The Woman's Auxiliary of the Graham County Medical Society was organized December 4, 1951 in Safford, Arizona The group is small but has prospects of adding to its membership.

The first meeting was held January 8, 1952 at which time plans were laid for studying an activity program to be carried on by the members. These projects were decided upon: 1. Investigation of the health problems existing in the county; 2. Publicizing "Today's Health" and soliciting subscriptions; 3. Sponsoring monthly health programs on the radio to be given by children from the schools in Graham County.

There are many lines of work which may be followed in the future, one of them being to stimulate young girls in the junior high age group to take the nurse's course. The community has a need for nurses; and in view of the increasing study of Civilian Defense, a group of young women trained in the nursing profession is not only desirable but necessary to the community. It is hoped that this year will see our main projects accomplished, and steps taken toward others.

Mrs. Frederick W. Knight
President—Graham County Aux.

Yavapai County has had only two meetings since last May and have not started any project. Outside of giving food and toys to the poor for Christmas we haven't been very active. We will start some projects after Christmas.

Mrs. Ernest A. Born, Prescott, Arizona

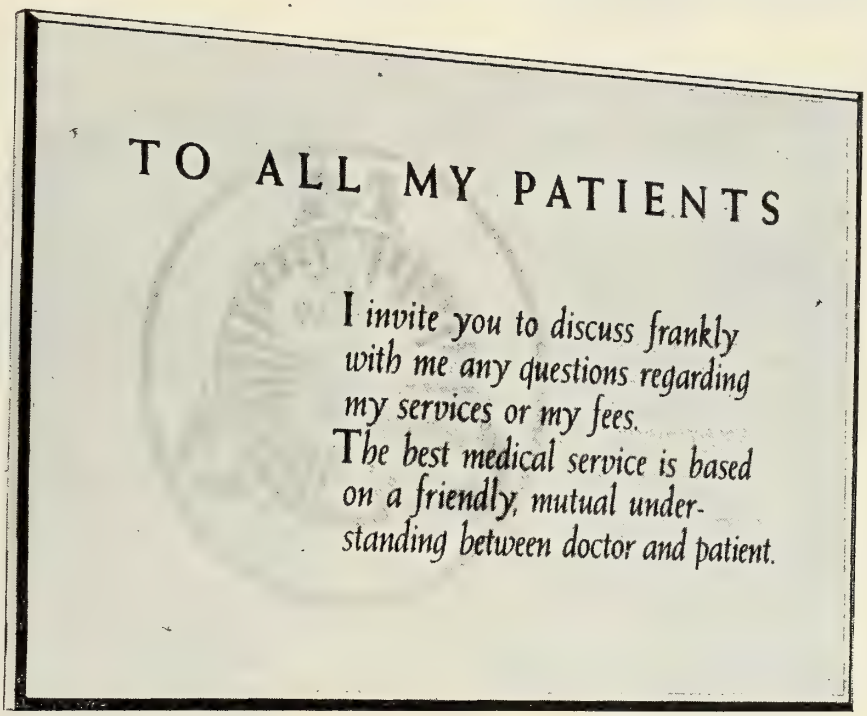
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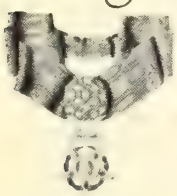


nine-hour battle, running an eight-mile gantlet through enemy lines. He finally withdrew to friendly lines, but not until after his ammunition was exhausted and he had left 250 enemy dead behind him. Even then, although wounded twice, he attempted to resupply his tank and return to the fighting.

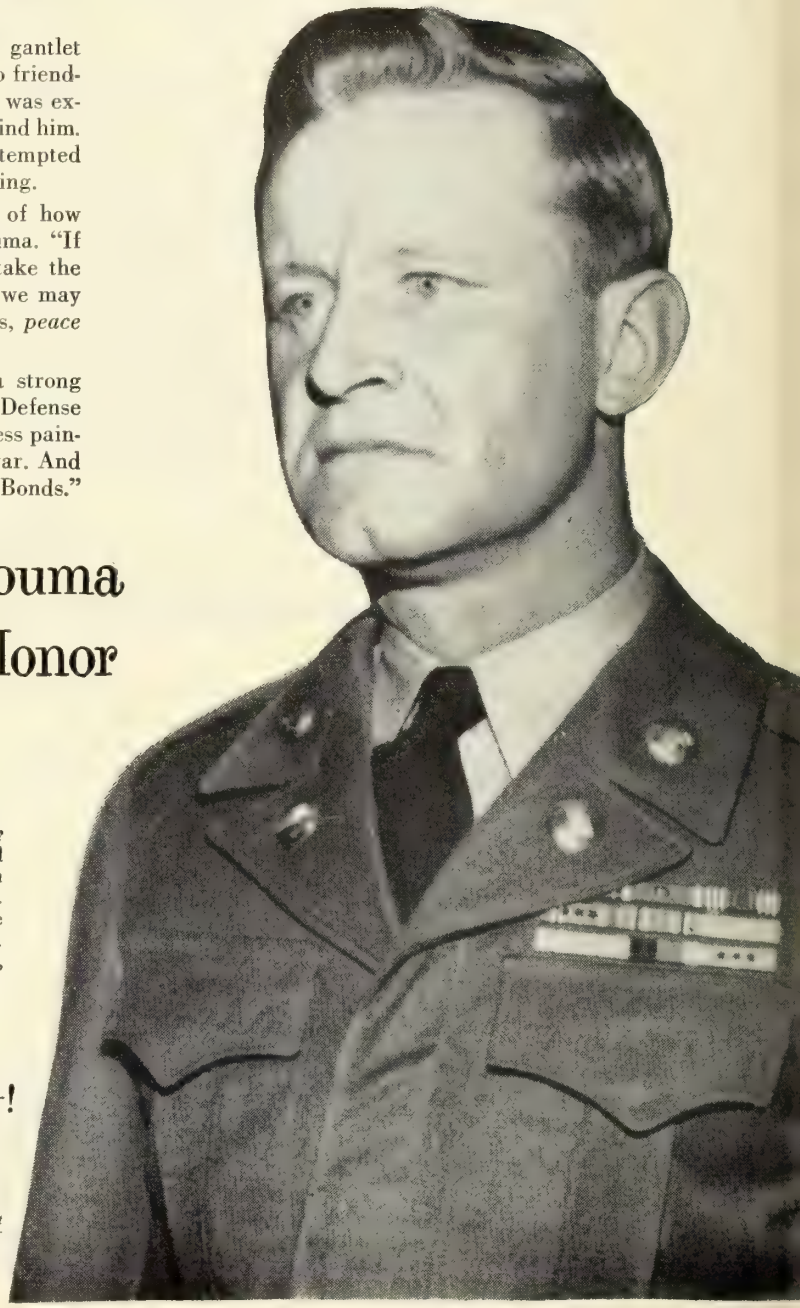
"A withdrawing action is not my idea of how Americans should fight," says Ernest Kouma. "If we must fight, let's be strong enough to take the offensive. In fact, *if we're strong enough,* we may not have to fight at all. Because, nowadays, *peace is for the strong.*

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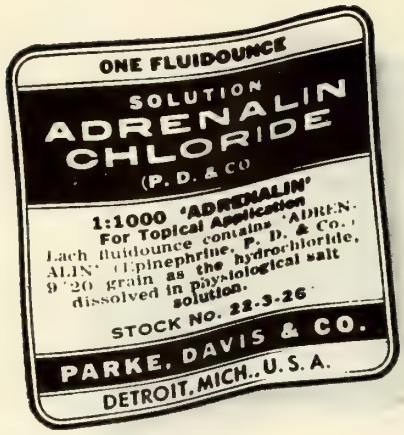
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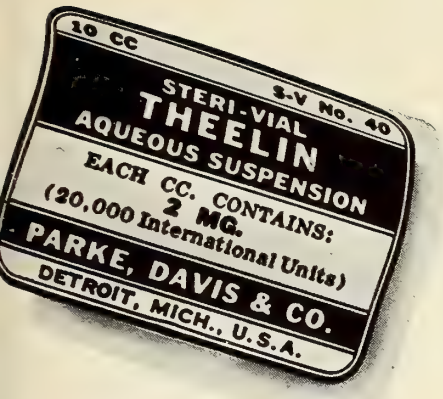
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# Meat and its Important Contribution of Essential Minerals

With the exception of calcium and iodine,[1] meat, as customarily consumed, makes an important contribution to the mineral needs of the American people. Its minerals include those needed in substantial amounts as well as those needed in trace amounts only.

The array of data listed below gives the approximate amounts of essential minerals provided by muscle meat when seven ounces per day are consumed.[1] The minerals include those now known to be essential components of the human organism—the skeletal framework and teeth, soft tissue structures including blood, and substances concerned in regulatory functions.

**APPROXIMATE MINERAL CONTENT OF MEATS**

**200 Gm. (approx. 7 oz.),[1] Edible Portion (Uncooked)**

| | Beef Round | Lamb Leg | Pork Loin | Veal Shoulder |
|---|---|---|---|---|
| Minerals, total[2] | 2.0 Gm. | 1.8 Gm. | 1.8 Gm. | 2.0 Gm. |
| Calcium[2] | 22 mg. | 20 mg. | 20 mg. | 22 mg. |
| Chlorine[3] | 147 mg. | 136 mg. | 125 mg. | 147 mg. |
| Copper[3] | 0.2 mg. | 0.2 mg. | 0.2 mg. | 0.2 mg. |
| *Iodine[4] (Ohio animals) | 0.02 mg. | 0.03 mg. | Data not available | 0.01 mg. |
| Iron[2] | 5.8 mg. | 5.4 mg. | 5.0 mg. | 5.8 mg. |
| Magnesium[3] | 46 mg. | 42 mg. | 39 mg. | 46 mg. |
| Phosphorus[2] | 360 mg. | 426 mg. | 372 mg. | 398 mg. |
| Potassium[3] | 661 mg. | 610 mg. | 559 mg. | 661 mg. |
| Sodium[3] | 164 mg. | 152 mg. | 139 mg. | 164 mg. |
| †Cobalt[5] | 0.0002 mg. | ——— | Data not yet available | ——— |
| †Manganese[3] | 0.03 mg. | 0.03 mg. | 0.02 mg. | 0.03 mg. |
| †Zinc[5] | 9.4 mg. | ——— | Data not yet available | ——— |

*Iodine content of meat varies with the iodine content of feed of the animals.
†Needed in trace amounts only.

The average values for iron, phosphorus, and copper of the four kinds of meat shown constitute about 46, 25, and 100 per cent, respectively, of the National Research Council's recommended daily allowances for adults, and the average values for chlorine, potassium, and sodium constitute about 14, 63, and 16 per cent, respectively, of the estimated daily adult needs, as based on mineral balance studies.[6] Although no specific information is available on the quantitative needs for cobalt, magnesium, manganese, and zinc, nutrition information would suggest that the amounts reported above have nutritional importance or significance.

In addition to its notable content of essential minerals, meat also furnishes large amounts of biologically complete protein and important amounts of vitamin B complex, which includes biotin, choline, folic acid, inositol, niacin, pantothenic acid, pyridoxine, riboflavin, thiamine, and vitamin $B_{12}$. On the basis of its rich contribution of nutritional essentials, meat well deserves its prominent place in the daily diet of the American people, the world's best-nourished people.

1. Recent estimates of the U. S. Department of Agriculture indicate that the per capita consumption of meat in the United States approaches seven ounces per day.
2. Watt, B. K., and Merrill, A. L.: Composition of Foods —Raw, Processed, Prepared, In Agriculture Handbook No. 8, United States Department of Agriculture, 1950.
3. Estimated on basis of protein content of meats. Sherman, H. C.: Food Products, ed. 4, New York, The Macmillan Company, 1948, p. 155.
4. Ohio animals; varies with iodine content of feed. Johnson, H. J.: Bridges' Dietetics for the Clinician, ed. 5, Philadelphia, Lea & Febiger, 1949, p. 800.
5. Mitteldorf, A. J., and Landon, D. O.: Analytical Chemistry; Spectrochemical Analysis of Beef for Mineral-Element Content, Armour Research Foundation of Illinois Institute of Technology. In Press.
6. Dauphinee, J. A.: Sodium, Potassium, and Chloride Malnutrition, Including Water Balance and Shock, in Jolliffe, N.; Tisdall, F. F., and Cannon, P. R.: Clinical Nutrition, New York, Paul B. Hoeber, Inc., 1950, p. 341.

The Seal of Acceptance denotes that the nutritional statements made in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.

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# ARIZONA MEDICINE

*Journal of* ARIZONA MEDICAL ASSOCIATION

VOL 9, NO. 3 MARCH, 1952


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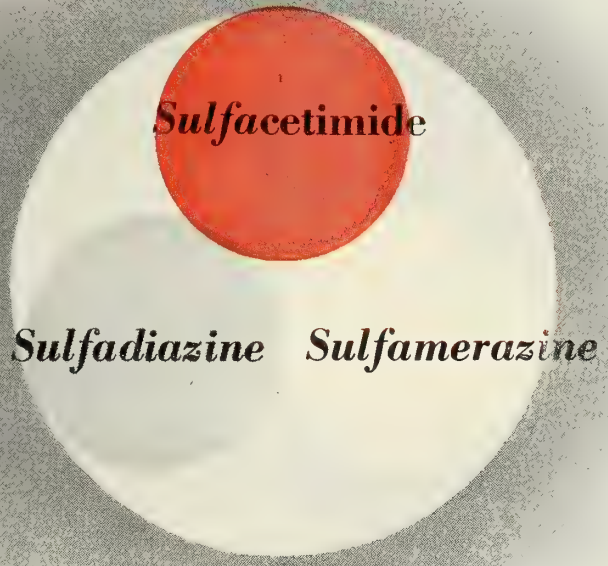
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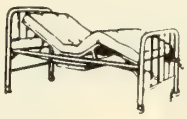
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1. From Burton Stevenson's "Home Book of Proverbs, Maxims and Familiar Phrases:" Macmillan Co., 1948, p. 2028.
2. Heller, E. M.: The Treatment of Essential Hypertension. *Canad. Med. Assn. Jour.*, 61:293-299, Sept., 1949.

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Ward, L. E., Slocumb, C. H., Polley, H. F., Lowman, E. W., and Hench, P. S.: *Proc. Staff Mtgs., Mayo Clinic* 26: 361, September 26, 1951.

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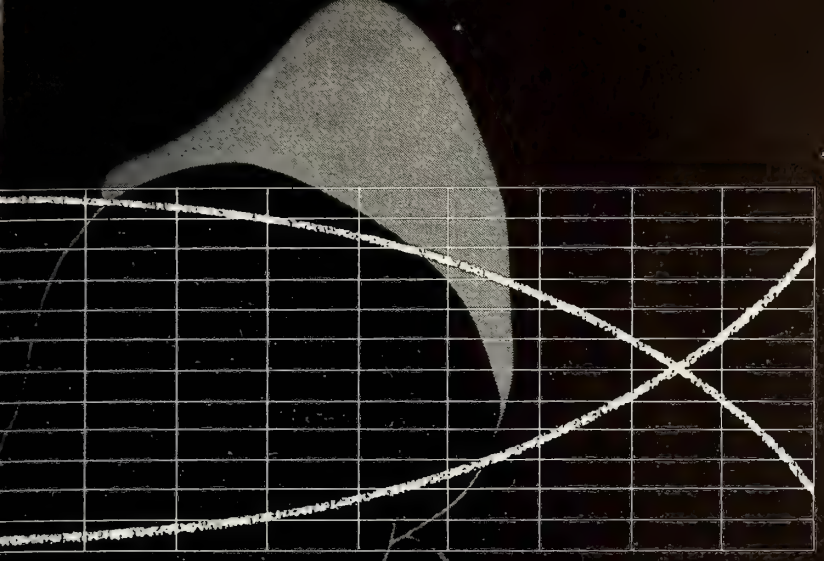
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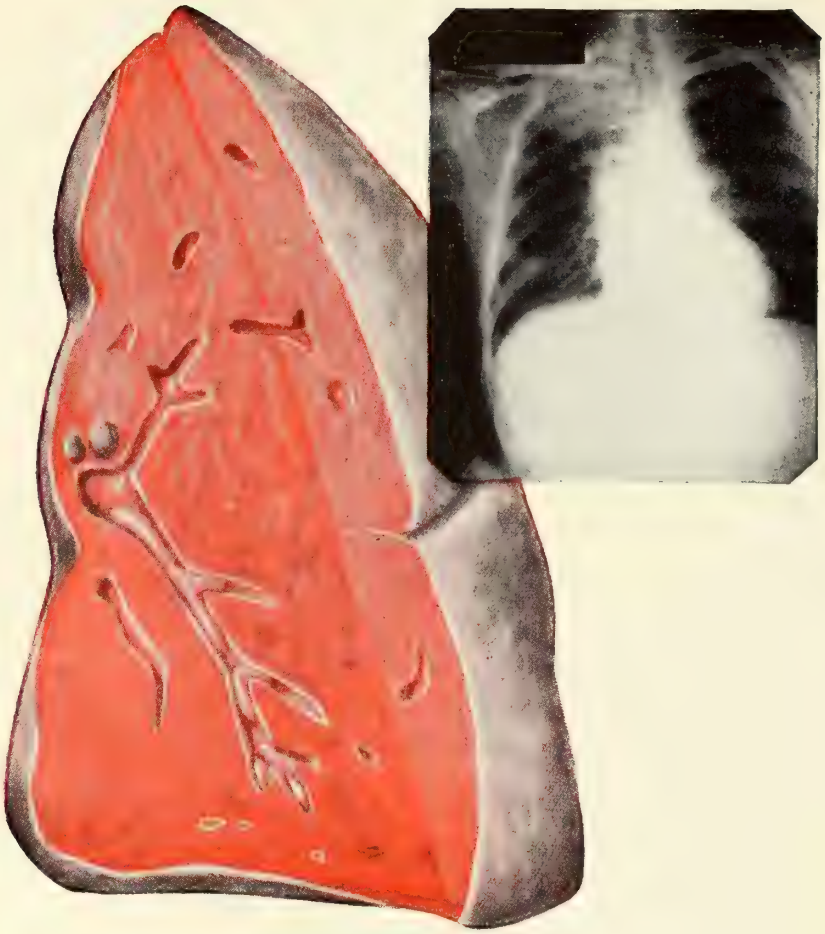
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*Graves, F. B., and Ball, W. O.: J. Pediat. 39:155 (Aug.) 1951*

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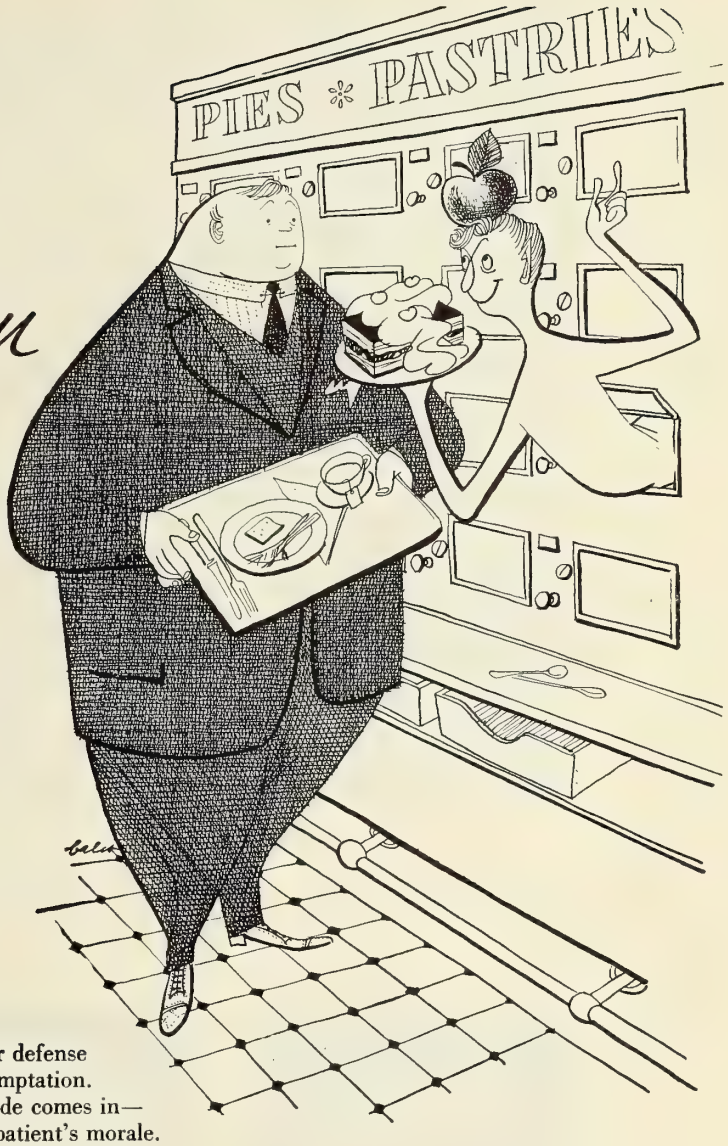
**J. Pediat. 39:325, 1951*

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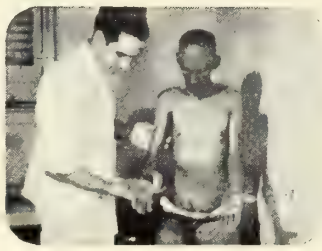
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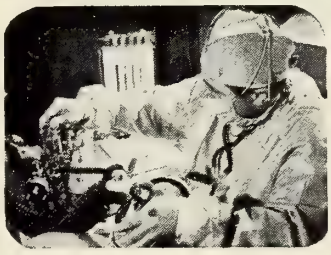
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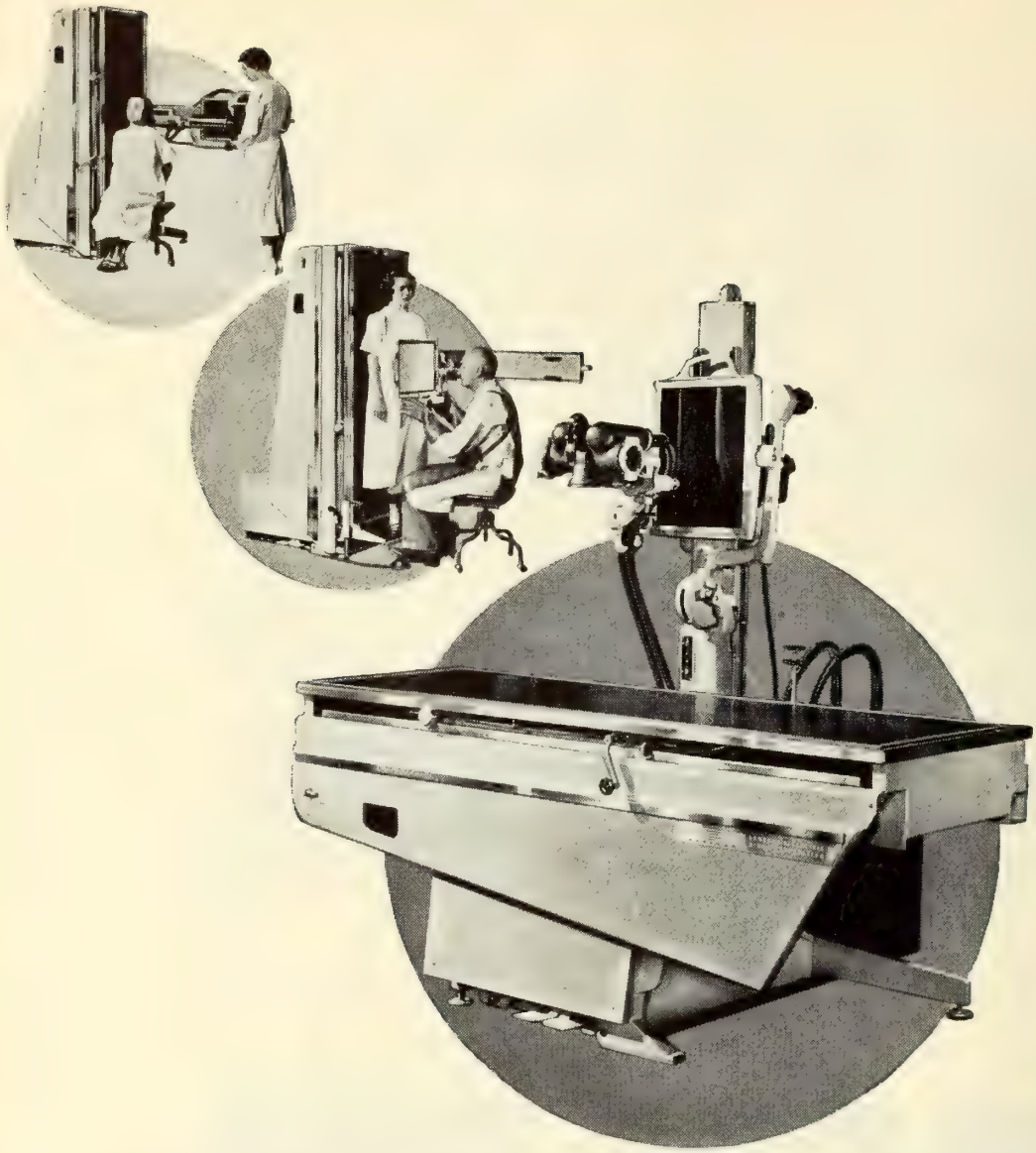








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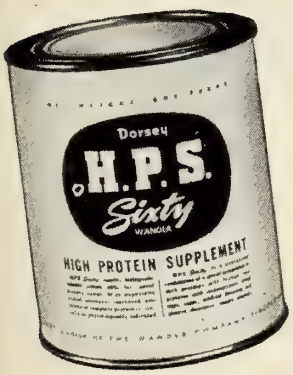
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**Among the several types, functional headaches** present the greatest problem because of their obscure etiology and recurrent nature.

Among these are:

Migraine (both classical and variant forms)
Tension headache
Psychogenic headache
Histaminic cephalgia

Wolff and his co-workers established that the pain of these headches is due to disturbance of the tonus of cranial blood vessels — hence the term *vascular headaches.*

**The craniovascular changes** associated with the several phases of the typical migraine attack are:

*Vasoconstriction* — to which the visual prodromata are attributable. It is possible to abort the attack during this phase in all but a few cases. (See treatment below.)

*Vasodilatation* — as the vessels lose their tone, exaggerated pulsations set in, resulting in the throbbing pain which characterizes vascular headache. Treatment for the attack is still effective during this phase. (See below.)

*Vessel Edema* — if the vasodilation continues for too long, vessel walls become edematous; this changes the character of the pain to a steady, intense aching. The attack can now no longer be checked, even with maximum dosage of specific drugs. *Moreover, sustained headache often induces reflex neck muscle tension, a source of residual pain.*

**Therapy: 1. Reduce the frequency of attacks** — psychotherapy and regulation of living habits to avoid fatigue and nervous tension.

**2. Relieve the acute attack** — of the numerous drugs which have been tried, ergotamine and its derivative preparations have proved most effective. The newest product is oral tablets of Cafergot®, N. N. R. (ergotamine with caffeine 'Sandoz'). When dosage is adjusted to the needs of the individual, Cafergot will give good relief in 85% of cases. It enables a greater number of patients to benefit from early administration since the oral route simplifies treatment as compared to parenteral therapy.

**The dosage procedure is:**

**1.** Take 2 tablets at first sign of the attack.
**2.** If attack continues, take one additional tablet every ½ hour until attack is terminated *(max. 6 tabs. per attack).*

Many migraine patients delay taking medication until the attack is at its height. Explicit dosage instructions may be forgotten unless the patient comes to realize their importance. Therefore, to encourage adherence to correct procedure, we have prepared pads outlining detailed dosage instructions. Supplies of these INSTRUCTION SLIPS will gladly be sent upon request.

GENERAL REFERENCES: DeJong, R.: Chicago M. Soc. Bull 54: 106, 1951. Friedman, A.: Modern Headache Therapy, St. Louis, C. V. Mosby Co., 1951. Wolff, H.: Headache and Other Head Pain, N. Y., Oxford Univ. Press, 1948.

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ARIZONA MEDICINE
Journal of Arizona Medical Association

VOL 9, NO. 3 MARCH, 1952

# Original ARTICLES

## LOCAL AND REGIONAL ANALGESIC INJECTIONS IN PAINFUL MUSCULOSKELETAL CONDITIONS

Otto Steinbrocker, M. D.

New York City

INTRODUCTION: In many musculoskeletal disorders the general and local symptoms frequently are dominated by persistant pain and disability which fail to respond to systemic and local measures. A vicious circle of pain, muscle spasm, disability and even deformity often appears to be produced and perpetuated to a great extent by the intractable discomfort. Owing to the dynamic role played by localized pain, as well as the need for its relief, there has been an extensive search for some direct method of abolishing pain, or at least to minimize it until the usual measures achieve their more gradual effects. The principles and techniques of regional and local anesthesia and analgesia, therefore, have been widely adapted to neuromusculoskeletal conditions for these purposes.

RATIONALE AND ACTION OF ANALGESIC INJECTIONS: The rationale of these procedures simply is to interrupt the pain circuit by local injections at the site of pain or irritability, at the origin of pain radiation or, finally, at the source of nerve supply to the involved part( regional or paravertebral). Usually one or two hours or more of local anesthesia follows. It is a generally accepted empirical observation that in many cases analgesia continues long after the anesthesia disappears. Varying degrees of analgesia often persist for one or several days to weeks, or permanently, when procaine solution or a related subsance has been administered at the proper location with correct techinque. The degree of response and duration of relief depend on the nature of the underlying pathology or disturbed physiology.

TYPES OF ANALGESIC PROCEDURE. Procaine solutions may be administered for relief of pain as *regional blocks* by the *paravertebral* route to infiltrate spinal or sympathetic nerves and ganglia, cranial nerves and ganglia, or to anesthetize the nerve supply to a region or part, as at the brachial plexus, or even to infiltrate special muscles such as the scalenus anticus. Subdural or epidural administration is done in some cases. Alcohol may be employed for lasting effects. All of these procedures require special training.

*Local block* is the infiltration of procaine or related solution at the site of palpable maximum tenderness, at a "triggerpoint", or about a peripheral nerve trunk. It is a simple procedure safe to carry out with ordinary precautions and skill.

*Intravenous* procaine solution recently has been advocated for the treatment of arthritis and other neuromusculoskeletal disorders. Our experience with this method in a controlled study has been quite unsatisfactory.

*Eythl Chloride Spray* is used for surface anesthesia and analgesia by freezing peripheral, painful and tender areas. Sometimes it produces prolonged relief of pain.

DIAGNOSTIC INJECTIONS of procaine solution provide valuable aid when correctly carried

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out. They are employed for confirmation in the scalenus anticus syndrome, bicipital tendinitis, pyriformis and sciatic syndromes, and in a variety of other clincial pictures by intramuscular, peritendinous or perineural infiltration; to establish localization of maximum tender points or "trigger points" by spot injections of the affected intramuscular or supportive structures. They may be utilized to confirm the diagnosis or the possible effectiveness of later alcohol blocks or sympathectomy, by paravertebral spinal nerve block, or sympathetic ganglion block with procaine in suitable cases.

THERAPEUTIC INJECTIONS: The therapeutic injection of analgesic solutions for musculoskeletal pain is carried out, following thorough examination to identify the source of pain, particularly visceral disease, after at least a tentative diagnosis has been made and when localizing signs are present. In such situations analgesic injections may prove a valuable adjunct, when the usual measures have failed to relieve pain, muscle spasm, stiffness, or disability. In traumatic, degenerative and "idiopathic" irritative processes of periarticular tissues and nonarticular supportive structures,—muscles, ligaments, tendons, bursae and nerves, in the neck, back and extremities—correct injection therapy frequently provides palliation and contributes to lasting relief. Inflamed joints or periarticular structures are not injected. Intraarticular infiltration is rarely required or carried out by us.

PRINCIPLES OF LOCAL ANALGESIA: In general, for those not trained in regional anesthesia, the safest rule is to inject only sore points that can be localized with the palpating finger. The point or points of maximum tenderness should be found and marked. Pressure there may reproduce the pain and radiation. The injecting needle may reprovoke the pain and its radiation when it penetrates the tender spot. Infiltration with procaine may partly or entirely abolish the signs and symptoms within 5-10 minutes. Points of lesser soreness are not injected. Skin hyperesthesia should be determined by pinch or scratch over the tender spot, lest it be part of a larger area of superficial hyperesthesia. A simple skin wheal is made for entry of the deep injection. A preliminary subcutaneous introduction of a few c.c. of normal saline solution serves as a useful control. No more than 5 c.c. of ½% procaine solution (or similar substance) is injected at first to be sure of the patient's tolerance. Inadequate relief after 2-3 infiltrations requires a search for better localization of the point of maximum tenderness, consideration of a regional block or reexamination of the signs and the diagnosis.

*Dosage and Frequency* of injection of procaine depend on the extent of tissue to be infiltrated and the severity of the pain and disability. At the first session we use no more than 5 c.c. of ½% solution. In peripheral tissues 2-20 c.c. of ½% or 1% procaine solution may be employed subsequently. In acute traumatic lesions 3-5 daily injections sometimes become necessary. In chronically painful disorders two injections a week suffice until improvement occurs, then once every 5-7 days. It is unnecessary to persist until pain and disability are completely abolished. When these symptoms are greatly improved, simpler adjuncts,—oral analgesics, physical modalities and exercises, are relied on to complete the recovery.

## HAZARDS AND PRECAUTIONS IN REGIONAL AND LOCAL BLOCKS

*Major Procaine Hazards* consist of accidental intravenous injection of a large amount and hypersensitivity even to a small dose. Previous history-taking is helpful.

*Minor Procaine Reactions* are encountered in up to 30% of patients. They consist of any one or more of the following: slight dizziness, pallor, sweating, tachycardia, palpitation, weakness, nausea, "remoteness", occasionally fainting. These symptoms appear within 5-15 minutes after the injection, but they may be delayed for a few hours. Sometimes it is difficult to decide whether the reaction is due to hypersusceptibility or simple fright. The possibility of these reactions always should be mentioned tactfully in advance. Should any of them occur, it is taken for granted by the patient.

*Use of Barbituates,* 1 1-2 gr. orally an hour before treatment is a routine premedication. For emergency, in case of accidental intravenous injection of a large amount of procaine, or for symptoms of severe procaine hypersensitivity, an ampule of one of the intravenous barbiturate preparations, such as sodium evipal or sodium pentobarbital should be kept handy for quick use if necessary.

*Relaxation of the patient* is assured by placing her in the most comfortable position for the procedure.

*Aspiration,* when the needle is in place, is always done before injecting and is repeated intermittently during infiltration, to be sure the needle-point has not entered a blood vessel. If blood returns, the needle is withdrawn and gentle pressure is used for a minute or so. The puncture is repeated then at a short distance from the first point of penetration and administration of the dose completed. Too superficial injection is followed by bulging. It may alarm the patient unless it has been mentioned.

*Relief of "after-pain"* may be required when soreness at the injection site occurs for several hours or longer following treatment. This symptom is apt to be transient, otherwise it is relieved by a hot water bottle or warm bath followed by gentle massage at the site.

*Care in inserting the needle* should always be exercised by directing it slowly and gently with a minimum of manipulation to avoid traumatizing tissues, especially blood vessels and nerves. Rarely, when these precautions are not observed, a needle-point is broken and embedded in periosteum.

*Aseptic Precautions* should be followed at all times. Before making each wheal a generous circle of skin, over and about the point to be penetrated, is cleansed with pure alcohol.

Fresh, undeteriorated solutions without adrenalin are used, and they are kept at room temperature.

## RESULTS

These measures have proved effective in a variety of musculosketal disorders unresponsive to other treatment and compared with control observations. The more definite the objective signs associated with pain, the greater is the reliance to be placed on the effects of analgesic procedures. Demonstrable, anatomically consistent tenderness, hyperesthesia, muscle spasm, and limitation of function offer tangible evidence for diagnosis and localization. Such signs also serve as criteria by which therapeutic response can be gaged without depending upon the patient's opinion. The results are not uniform for all the conditions amenable to such therapy, and depend on the type and severity of the varied disturbances treated by these methods. In local disorders, or in regions where nerves are accessible, the outcome is likely to be highly satisfactory in over 70% of the cases. Successful therapy in conditions like backache, for example, depends as much on the correct diagnosis and localization of the seat of trouble as upon the analgesia itself. In early degenerative arthritis of a knee with secondary irritative phenomena about the joint, periarticular injection proves more helpful than in advanced articular disorganization where effects are too brief to be useful. Infiltration of soft tissue lesions, which provide reliable localization and can readily be reached by the needle, gives a high frequency of lasting relief, if they are primarily local processes rather than referred symptoms.

## COMMON CAUSES OF UNSUCCESSFUL TREATMENT

As with many empirical measures the margin of failure varies with the skill and enthusiam of the observer. Careful diagnosis. localization and technique make for better results and fewer reactions. An unsatisfactory outcome is the rule when procaine solution is administered under the following circumstances: advanced pathology of joints or soft tissues; in patients with uncorrected defects in body mechanics; wrong diagnosis or localization of the source of pain; distant referred areas of pain transformed into areas of temporarily deferred pain; undiagnosed multiple lesions; unrecognized superficial hyperesthesia; somatizations and conversion syndromes.

## THE PLACE OF ANALGESIC INJECTIONS IN MUSCULOSKELETAL DISORDERS

Procaine solution is. of course, not a solvent for deranged or degenerated tissue. Although a highly diffusable preparation, it cannot be expected to trap vague, intractable aches and discomforts. These analgesic procedures are indicated only after proper examination and at least a tentative diagnosis. Except when acute discomfort of definite musculoskskletal origin must be relieved, the usual accepted therapeutic measures first should be permitted a fair trial.

Analgesic injections or blocks,therefore, are employed as highly selective procedures, alone or as adjuncts to other medical measures or physical modalities. In our experience about 20% of consecutive patients with locomotor disorders are suitable for diagnostic or therapeutic procaine administration. The proper use of these procedures accelerates and amplifies the effectiveness of our resources in the differentiation and management of painful musculoskeletal conditions.

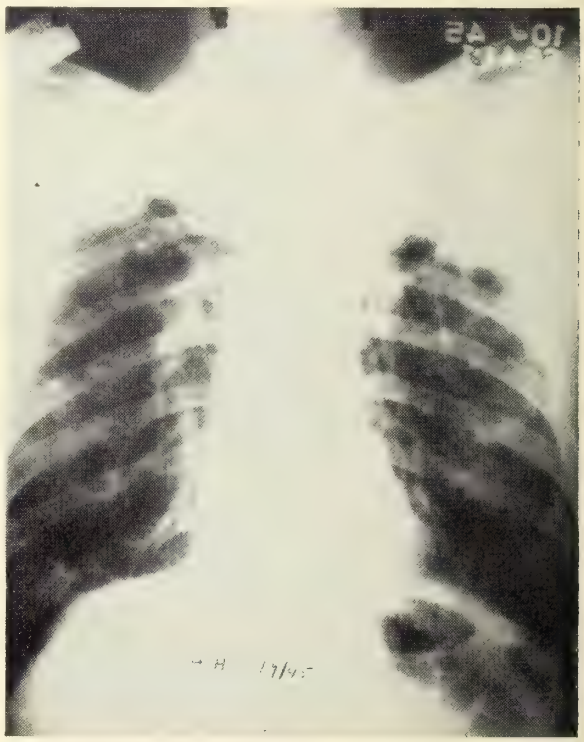
# CARCINOMA OF THE LUNG ASSOCIATED WITH CHRONIC PULMONARY DISEASE

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The basis of this report is a study of twenty-eight cases of carcinoma of the lung admitted to the Whipple Veterans Hospital in the five years prior to July. 1951. Thirteen of these have been in the past year. During this five-year period the total of all carcinomas was seventy-two. The figures are incomplete but the proportion of lung cancers to other type of carcinoma is significant.

Of the twenty-eight patients with carcinoma of the lung thirteen had chronic pulmonary disease. There were five with pulmonary tuberculosis but only one with active tuberculosis, four with asthma, three with bronchiectasis, one with pneumoconiosis, and one with moderately severe emphysema. Emphysema was present in most of the thirteen patients in varying degree. Of the twenty-eight patients, six (21%) had resectable lesions, and of the six, two had chronic lung disease, one asthma and the other bronchiectasis. Four of the twenty-eight patients had so much non-malignant pulmonary disease as to preclude surgical treatment of the carcinoma. One of the four had far advanced active tuberculosis and three had very severe pulmonary fibrosis and emphysema with asthma. Of the thirteen patients with bronchogenic carcinoma complicating their previous respiratory disease, three had no definite symptoms referable to carcinoma of the lung, and separable from those complaints caused by their pre-existing disease. One of these had a small unsuspected bronchogenic carcinoma which was found at post mortem examination. The other ten patients had a definite change in symptoms, including recurrent respiratory infections, hemoptysis, weight loss, increasing cough and chest pain. The new symptoms had been present for from three months to one year. All of these patients were admitted to the hospital with an admitting diagnosis of pulmonary disease, whereas of the group of fifteen without pre-existing chronic lung disease five were admitted with no pulmonary diagnosis, one peptic ulcer, one arthritis, two heart disease and one paroxysmal auricular fibrillation. Three patients, all in the past year, were referred to the hospital after local chest x-ray survey, two of them being in the group with pre-existing lung disease. A few illustrative cases of bronchogenic carcinoma are presented.

CASE I: H. H. This fifty-three year old white male was admitted to Whipple October 8, 1945. The patient had noted cough, chest pain and weight loss for eight months before admission. Physical examination on admission showed emaciation, dullness and rales over the upper half of the chest bilaterally and clubbing of the fingers. Sedimentation rate was markedly elevated. There was a mild anemia. Sputum smears were persistently positive for acid fast bacilli. X-ray showed far advanced bilateral tuberculosis. In August, 1946, a small round lesion was noted in the right upper lobe, and as seen on serial films grew progressively larger. The patient refused diagnostic studies but it was apparent clinically



CASE I:

Fig. 1-a. Chest film on October 9, 1945 reveals infiltration in both upper lobes with cavitation, and scattered infiltration bilaterally.

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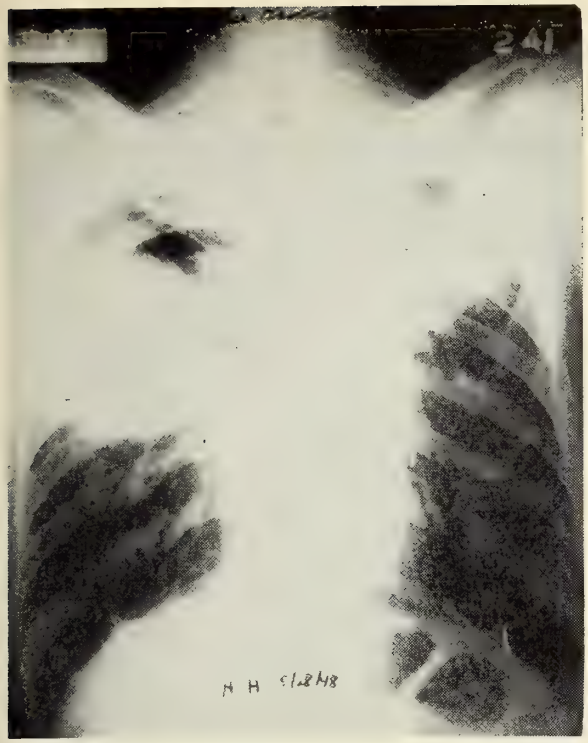


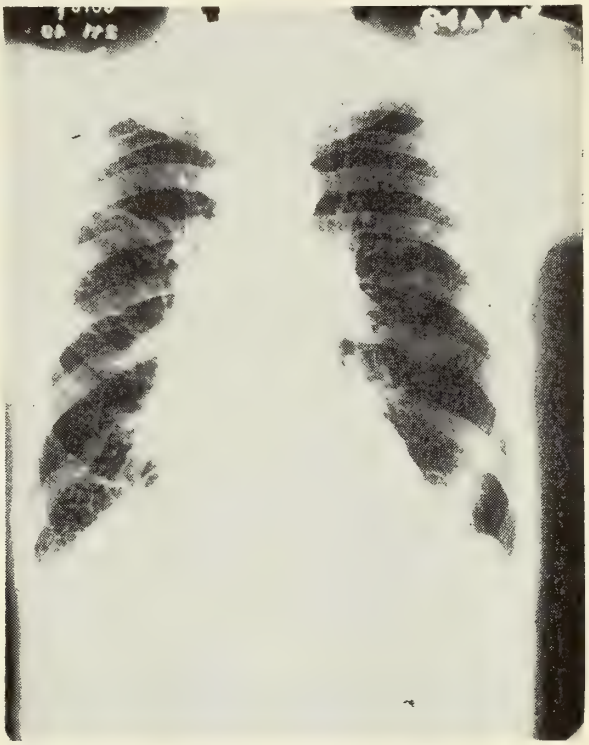
Fig. 1-b. May 28, 1948—A large "cannon ball" shadow is seen in the right mid lung field and there is increase in the infiltration in both upper lobes.

that he had carcinoma of the lung. Shortly before death in January, 1949 he developed localized convulsions. Post mortem examination showed bilateral cavitary pulmonary tuberculosis and a carcinoma of the right upper lobe with metastases to the adrenals and brain.

CASE II. J. J. H. This sixty-one year old white male had a history of asthma since 1933, with numerous hospitalizations over the past fifteen years for frequent chest colds and bronchitis. During that time shortness of breath became progressively worse with progressive weight loss, and several physical examinations during this period revealed marked emphysema with a constant finding of bilateral wheezes and rales.

In January of 1949 the patient was hospitalized at the Veterans Hospital, Wood, Wisconsin, with a complaint of pain in the left lower chest associated with respiration, increased cough and hemoptysis present for a few days and slight fever. Physical examination showed marked emphysema, bilateral wheezes and rales, and a friction rub over the left chest, clubbed fingers and emaciation. Chest x-ray showed emphysema and fibrosis, with a slight pneumonitis in the right and left lower lung fields. Sputum studies were negative. The patient improved on penicillin but refused bronchoscopy and bronchography.

In August of 1949 the patient had a G-I series



CASE II:
Fig. 2-a. Chest film on February 11, 1949 shows pulmonary fibrosis and emphysema with pneumonitis in both lower lung fields.

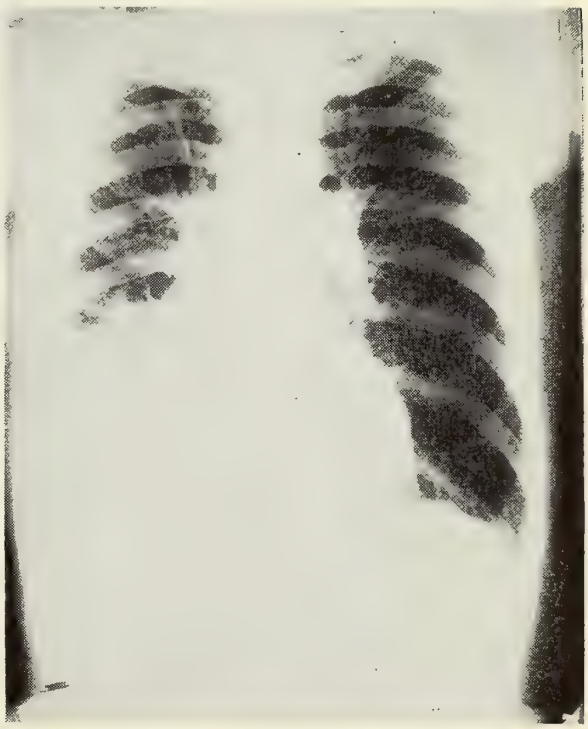
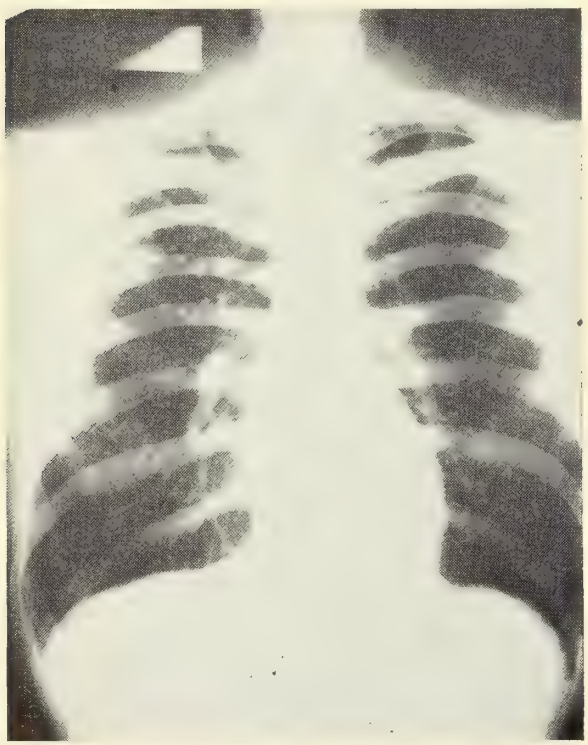


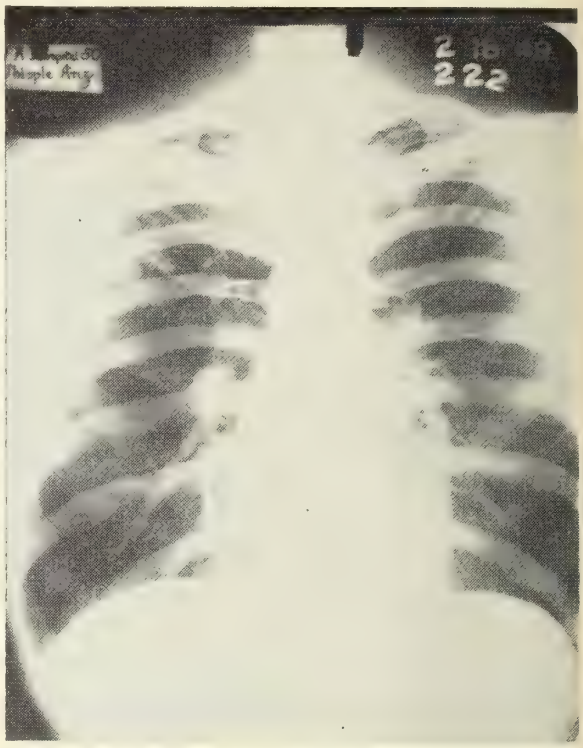
Fig. 2-b. August 11, 1949—A confluent infiltration is seen in the right lower lobe.

for abdominal complaints and fluoroscopy showed a density at the right base, the patient being returned to the hospital. At this time he showed low grade fever, leukocytosis and elevated sedimentation rate. His only chest complaint was cough with considerable expectoration, but no hemoptysis since the previous admission. In November of 1949 the patient consented to bronchoscopy and a tumor mass was seen in the right main stem bronchus just distal to the right upper lobe bronchus. Biopsy showed a squamous cell carcinoma. The patient's disease was considered inoperable because of the associated lung disease. The patient left Wood, Wisconsin and came to Whipple January 17, 1950, where he died March 11, 1950. Post mortem examination revealed a tumor growing into and almost occluding the right lower lobe bronchus. The entire lower lobe was consolidated and on section showed marked dilatation of the bronchi and bronchioles which were filled with pus; consolidation and small abscess formation were found in the surrounding lung. The impression was that of chronic bronchiectasis with recent changes due to bronchial stenosis. Extensive emphysema was noted in both lungs. Tumor tissue was found in the regional lymph nodes and the liver.

CASE III. F. W. This white male was first admitted to Whipple April 15, 1947 at the age



CASE III:
Fig. 3-a. Chest film on October 2, 1945 shows pleural thickening over both apices with fibrotic lesions in the right 2nd and 3rd anterior interspaces and calcific lesions overlying the left 2nd anterior rib.



Fib. 3-b. February 18, 1949—There is contraction of the fibrous lesions in the right upper lobe.

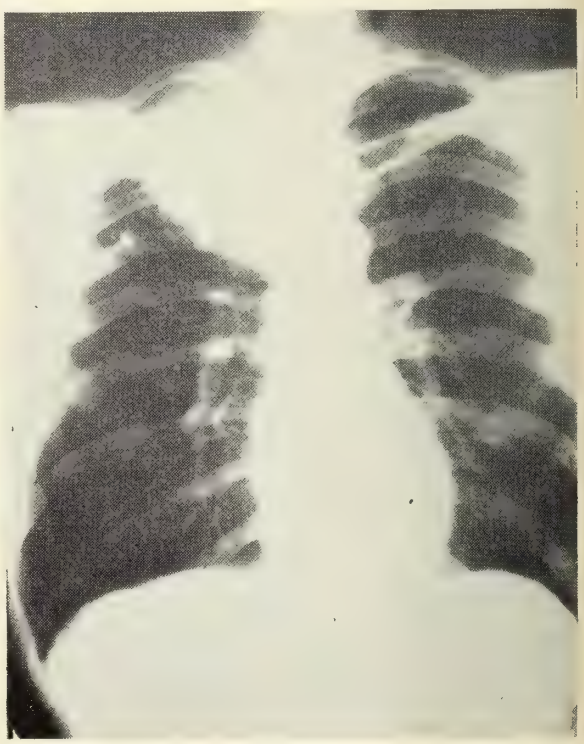
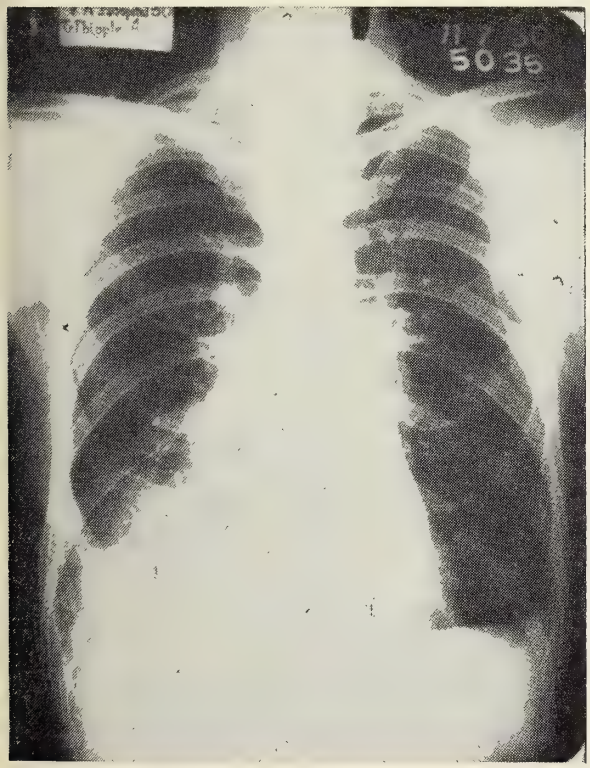


Fig. 3-c. January 10, 1950—A large mass is seen in the right upper lobe.

of twenty-seven. Pulmonary tuberculosis had been diagnosed while the patient was in the Army after his return from a German prison camp. X-ray here showed a fibrotic area in the right upper lobe with a healed lesion in the left upper lobe. Physical examination was essentially negative. No acid fast bacilli were found and the patient was discharged with a diagnosis of arrested pulmonary tuberculosis March 23, 1948, after completing a program of graduated exercise under observation. He was hospitalized for observation during February and March of 1949 and continued as an arrested case. January 6, 1950 he was readmitted with a diagnosis of reactivated pulmonary tuberculosis. He complained of pain in the right upper chest, weight loss and difficulty in swallowing, the complaints having been present for two months before admission. Physical examination showed increased tactile fremitus and a few rales over the right upper lobe and later a right sided wheeze was noted. Sedimentation rate was increased and leukocytosis was present. The chest x-ray showed a mass lesion in the right upper lobe. Bronchoscopy did not show an endobronchial lesion. Surgery on January 25, 1950 revealed an inoperable carcinoma of the right lung. Patient was transferred to another hospital for x-ray treatment where he died March 23, 1951. Post mortem examination showed an anaplastic bronchogenic carcinoma of the right upper lobe, with metastases to the chest wall and adrenals. No active pulmonary tuberculosis was noted.

CASE IV. J. B. This fifty-nine year old white male was admitted October 14, 1950 with an admitting diagnosis of asthma. Respiratory distress had been present since 1933 and was diagnosed as asthma. The respiratory difficulty did not become disabling until 1942; symptoms of respiratory insufficiency increased markedly from that time. Since 1946 he had had frequent respiratory infections, worse in the winter, and had lost forty pounds since 1948. He had been sent to Arizona from the Middle West in 1946 for climatic relief. His complaints on admission were wheezing, shortness of breath and productive cough without hemoptysis. Initial physical examination showed a markedly emaciated white male. A-P diameter of the chest was greatly increased and respiratory excursion was poor. The chest was hyperresonant and coarse rhonchi were heard bilaterally. Dyspnea was present at rest. X-ray of the chest showed extensive



CASE IV:
Fig. 4-a. Chest film on November 7, 1950 shows emphysema, old fibrous pleuritis and a nodular infiltration involving the right lower lobe.

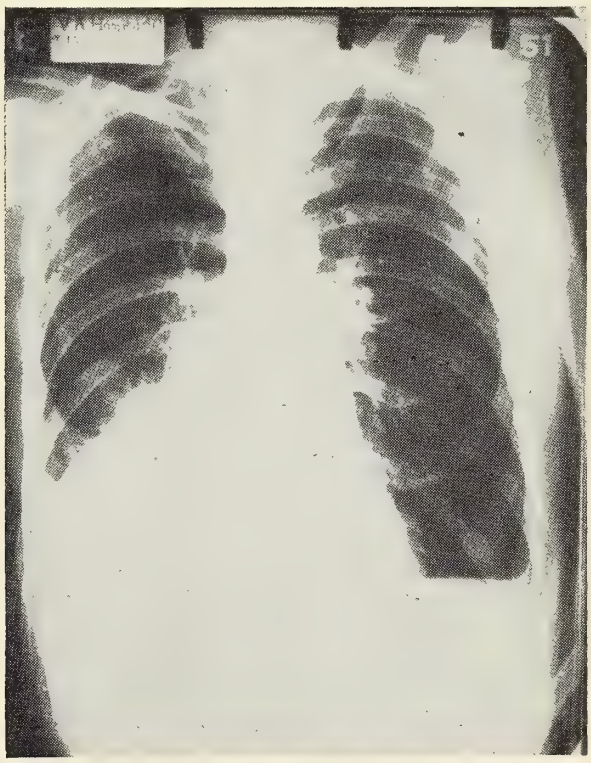
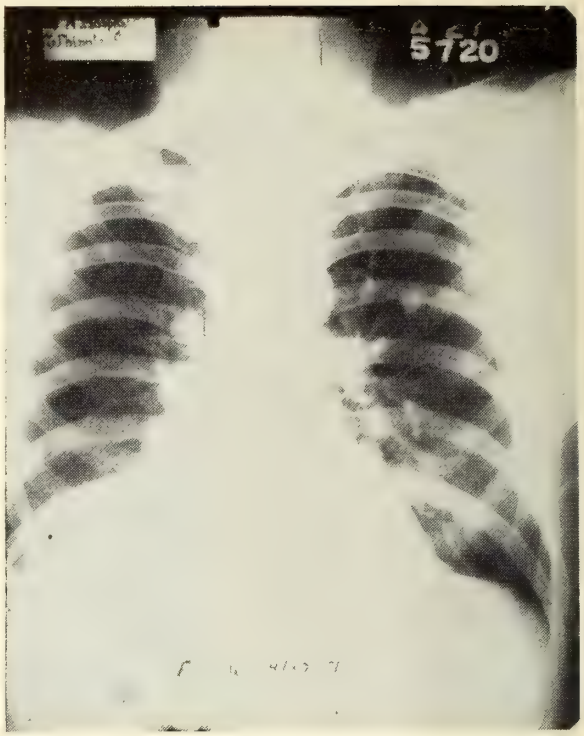


Fig. 4-b. May 23, 1951—The shadow in the right lower lobe is now dense and homogeneous and there is a suggestion of a pleural effusion.

fibrosis and emphysema with an inltration in the right lower lobe. The presence of fluid in the right pleural cavity was suggested by x-ray but attempts at aspiration yielded no fluid. The initial impression was pneumonitis, secondary to bronchiectasis, and later lipoid pneumonia and carcinoma were considered. Bronchoscopy showed no endobronchial lesion but pus was noted in the bronchi bilaterally. Bronchial aspirations and sputa were negative for tumor cells, acid fast bacilli and fungi. Serial x-ray films were quite suggestive of malignant disease but the severity of the patient's chronic pulmonary disease made surgery unfeasible. Terramycin kept the patient free of fever. When the antibiotic was stopped he would invariably develop fever again. Downhill course continued and the patient died June 3, 1951. Post mortem examination showed a carcinoma of the right lower lobe bronchus, 3.5 cm. from its origin, obstructing the lumen almost completely. Distal to the obstruction an abscess 5 cm. in diameter was noted, and bronchi distal to tumor were dilated and filled with pus. There was very extensive emphysema and moderate scattered bronchiectasis.

CASE V. F. J. W. This fifty-one year old white male was seen April 27, 1951. He had had a cough for many years and had been told he had bronchiectasis some years ago. During a routine examination in September of 1950 a discrete round lesion was noted in the left upper lobe. He was hospitalized in October 1950 at another hospital for investigation. Bronchoscopy was negative as were sputum studies, and he was told the lesion was an old scar. In January of 1951 his cough increased and he developed fever and chills. He was treated successively with penicillin, aureomycin and terramycin. On March 30, 1951 he coughed up a piece of tissue which he took to his doctor and a squamous cell carcinoma was found on section of this tissue. When the patient was seen here he had a slight cough with a small amount of mucoid sputum. Before treatment with antibiotics the sputum had been profuse and clear in color. Streaking had been noted several times in 1951. Physical examination was negative and there had been no weight loss. Chest x-ray showed a density at the right base suggesting a segmental collapse of the right lower lobe and the possibility of a small right pleural effusion. A nodular density one-half cm. in diameter was noted in the left second interspace. The patient was transferred to the Veterans hospital at Long Beach, California, where on bronchoscopy tumor was found in the right lower lobe bronchus, and right pneumonectomy was done May 10, 1951. The excised lung showed in the lower lobe a squamous cell carcinoma and chronic bronchiectasis, with pneumonitis and small abscesses. Follow-up chest film on September 14, 1951 showed no change in the nodular lesion in the left upper lobe and the patient was in excellect physical condition.




CASE V:
Fig. 5. Chest film on April 27, 1951 shows a round shadow 0.5 cm. in diameter in the 2nd left anterior interspace and a density at the right base, suggestive of a segmental collapse of the right lower lobe and the possibility of a small right pleural effusion.

## SUMMARY

Much has been written recently of the increase in the incidence of carcinoma of the lung (1, 2, 4, 5). In a recent article, Poppe(1), reviewing a series of two hundred cases of pulmonary carcinoma in Portland, Oregon, in the past five years, found the incidence of carcinoma of the lung second only to malignancy of the G-I tract. Moyer and Ackerman(2, 3) report that carcinoma of the lung constitutes 6 to 10% of all carcinomas. Ochsner(4) found 86.4% of carcinoma of the lung in his series of four hundred twelve cases were in males, and 85% of the cases of carcinoma of the lung in Hollingsworth's(5)

series were in men. At this hospital in the past five years carcinoma of the lung has constituted 39% of the total number of carcinomas. The Whipple Veterans Hospital has an exclusively male patient population and a high percentage of the patients, whatever their admission complaints, have chronic pulmonary disease. Many veterans from all over the country with chronic pulmonary disease have either been sent or come of their own volition to the Southwest seeking climatic relief. These factors contribute to the disproportionate percentage of pulmonary neoplasms at this hospital.

Phillips and Morrison(6) cite a case of bronchogenic carcinoma masked by pulmonary tuberculosis. Numerous such cases have been reported and a figure of 1.5% has been given for the incidence of bronchogenic carcinoma in pulmonary tuberculosis. Moyer and Ackerman (2, 3) stated that bronchiectasis as a result of bronchial obstruction and secondary infection is seen in about 20% of the cases with bronchogenic carcinoma. Bronchiectasis may be so prominent that correct diagnosis is obscured if the primary tumor is not easily demonstrable. This, of course, holds true whether bronchiectasis is present before the occurrence of tumor, or, as more commonly occurs, is secondary to the tumor itself. Localized emphysema is another common finding secondary to the bronchial obstruction in carcinoma, and in the segments of the lung distal to the bronchial obstruction, atelectasis, abscess and pneumonitis are common. Secondary infection is frequent during the symptomatic phase of carcinoma of the lung, leading to misdiagnosis and misdirected treatment usually for recurring colds, chronic bronchitis and virus pneumonia(7, 2, 3). These complications, due to infection, are common in patients with chronic lung disease (fibrosis, emphysema, asthma and bronchiectasis) and occurrence of such symptoms should lead to consideration of the possibility of bronchial stenosis by carcinoma.

There are three points of interest in the consideration of bronchogenic carcinoma associated with chronic lung disease. These are the etiologic relationship, the diagnostic difficulties and the manner in which the pre-existent lung disease alters the therapeutic approach. This series of patients is too small to warrant any definite conclusions as to etiologic relationships. The concensus in numerous reports in the literature is that the relationship between tuberculosis and other chronic lung disease and bronchogenic carcinoma is coincidental. Approximately 50% of the patients in this series with carcinoma of the lung had chronic pulmonary disease. Despite the fact that approximately one-half the patients at the Whipple Veterans Hospital are being treated for tuberculosis, only one patient in this series had definitely active pulmonary tuberculosis. In chronic non-tuberculous lung disease, bronchogenic carcinoma supervened very commonly. This latter finding cannot be interpreted as showing any etiologic relationship between the chronic pulmonary disease and carcinoma of the lung since a large percentage of the patients entering this hospital have had pulmonary disease for many years.

The presence of significant chronic pulmonary disease had led in some cases to the masking of symptoms of carcinoma to a point that one cannot date the onset of symptoms due to the carcinoma. In most of the patients there was a definite change in type and severity of symptoms. Consideration of the possibility of carcinoma of the lung in these patients with the appropriate diagnostic studies should lead to the correct diagnosis. The patients themselves may not be concerned by new pulmonary symptoms after years of coughing and chest pain, and in some of the patients there was an unduly long delay before relief was sought. The percentage of patients in the present series with resectable lesions (21%) is about the average in pulmonary carcinoma although some authorities report the percentage of patients with carcinoma of the lung coming to resection as high as 40%(1, 2, 8). The percentage of the patients suitable for resection in this series was lowered by the presence of those patients whose non-malignant lung disease had lowered the respiratory reserve to a point where surgery could not be considered. It may be seen then that the presence of a pre-existing pulmonary disease is another factor adding to the difficulties in diagnosis of bronchogenic carcinoma and the application of curative surgery.

## CONCLUSIONS

1. In a series of twenty-eight patients with carcinoma of the lung seen at the Whipple Veterans Hospital in the past five years, thirteen had pre-existing chronic pulmonary disease.

2. The existence of chronic pulmonary disease adds to the difficulty of early diagnosis and

may limit surgical attack by the limitation of respiratory reserve.

3. In view of the frequent occurrence of carcinoma of the lung in patients with chronic pulmonary disease, the diagnosis of bronchogenic carcinoma should be kept in mind in the presence of a change in symptoms and questionable x-ray findings.

4. Five case reports are presented illustrating some of the problems discussed.

BIBLIOGRAPHY

1. Poppe, J. K.: "Bronchiogenic Carcinoma Masquerading as Other Diseases", Diseases of the Chest, 20:75-83, July 1951.

2. Moyer, John H.; Ackerman, Alfred J.: "Bronchogenic Carcinoma as a Differential Diagnostic Problem in Pulmonary Disease", American Review of Tuberculosis, 63: 176-193, Feb. 1951.

3. Moyer, John H.; and Ackerman, Alfred J.: "Bronchogenic Carcinoma as a Differential Diagnostic Problem in Pulmonary Disease", American Review of Tuberculosis, 63: 255-274, March, 1951.

4. Ochsner, A. D., DeBakey, M., and Dixon, J. L.: "Primary Carcinoma of the Lung", Journal of American Medical Association, 136: 321-327, 1947.

5. Hollingsworth, R. K.: "Bronchiogenic Carcinoma; an Analysis of 343 Cases", Annals of Internal Medicine, 26: 377-385, 1947.

6. Phillips, J. R. and Morrison, J. W.: "Bronchogenic Carcinoma Masked by Pulmonary Tuberculosis; Case Report", Diseases of the Chest, 19:201-208, 1951.

7. Overholt, R. H. and Schmidt, I. C.: "Silent Phase of Cancer of the Lung", Journal of American Medical Association. 141:817-821, 1949.

8. Reinhoff, Jr., W. H.: "A Clinical Analysis and Follow-Up Study of Five Hundred and Two Cases of Carcinoma of the Lung", Diseases of the Chest, 17:33-53, 1950.

# NEWER TRENDS IN OPHTHALMOLOGY

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Probably nowhere in the human body is there an area which may be so readily examined by simple or complex apparatus than the human eye. It may be seen by the naked eye, by high external magnification, by internal examination of several kinds, by transillumation, and binocular viewing methods. It can be palpated, turned, and compressed. It's blood supply can be seen, many of its sensory and motor neurologic sensoria can be reviewed by objective and subjective tests.

Because of these and other peculiarities of the human eye, the average ophthalmologists office looks like a machine shop. With this complex machinery it is often possible to learn much about an eye and its disease. In spite of all these advantages, there are exasperating problems. Those outside this specialty are required for help—sometimes the assistance of a number of physicians and laboratories.

In recent years there has been a steady progress, towards specificity in diagnosis and treatment. So many have been these advances that review of them all is impossible here.

Until recent years ophthalmic medical armamentarium was quite limited. There were few specific curatives, and not too many reliable diagnostic tests. Now innumerable investigative technics as well as medicines are useful. No longer is a casual look at a conjunctivitis proper before applying silver nitrate. It is not sufficient to dilate the pupil and use milk injections and salicylates in iritis. More than excision of the prolapsed iris is needed and there is treatment for dense corneal scars. The other extreme of using the new medicaments like penicillin routinely is equally improper. Nor should there be neglect of some of the older emperic treatments. Long after apparently successful newer procedures have been proved useless, the older ones may still prove to be helpful.

Some examples of specificity in treatment will illustrate the above points:—

A premature infant was seen about six hours after birth. The baby's eyes exhibited an unusual amount of secretion. Because of the peculiar greenish appearance of the secretion, it seemed that it might be pyocyaneous infection. After taking a smear and culture aureomycin ointment was ordered. The preliminary culture reported no organisms and the smear showed only pus cells. The secretion diminished but was present in reduced amount until the tenth day when the culture was reported to be gonococcus, penicillin sensitive. Penicillin immediately cleared it. Then why not use penicillin routinely? Another patient will show why. A baby had a serosanguinous eye secretion almost from birth. A streptococcus infection was suspected, penicillin ordered. A staphylococcus, penicillin resistant but sulfa sensitive culture was obtained. It cleared quickly on sodium sulfacetamide.

A man had recurrent blepharitis and conjunctivitis for years—he had used a dozen different emperically prescribed ointments and drops. A conjunctival culture was taken and terramycin ointment prescribed. The culture grew streptococcus and staphylococcus which were very sensitive to chloromycetin but insensitive to terramycin, penicillin, streptomycin

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and sulfanilamides. After a change to chloromycetin drops the infection cleared and has not recurred.

A similar infection in an elderly lady proved to be a dacryocystitis caused by micrococcus tetragenous which also was sensitive only to chloromycetin.

A patient with a recurrent iritis which did not respond to ordinary office procedure was hospitalized and brucellosis was discovered. Both iritis and brucellosis improved rapidly under chloromycetin therapy. A luetic iritis in a diabetc was cleared quickly after initiating penicillin treatment when the Wasserman was found to be positive. A tuberculous iritis which was thought to be non granulomatous because of its slit lamp appearance was probably tuberculous as the patient had active tuberculosis. His iritis improved materially under streptomycin and P.A.S. (para amino salicylic acid) therapy

These few cases demonstrate that one cannot be too thorough in ones care of these patients.

Trauma to the eye has always necessitated individuality of care and must be specific in various ways. X-ray pictures frequently show unsuspected specific damage, foreign bodies or infections and should always be made in an injured eye. An army sergeant who had been subjected to mortar explosion was being treated for loss of hearing. Routine eye examination showed vitreous opacities and an x-ray revealed a tiny intraocular foreign body which was rather easily removed. Another soldier became dizzy upon bending forward. He reported for eye examination which demonstrated a homonymous scotoma. X-ray of his skull showed a tiny metallic intracranial shell fragment. A field test was a specific aid to diagnosis.

Lacerations of the lids and eyes may be better repaired because of newer knowledge and instruments. Lid defects may be prevented by careful approximation with fine sutures. Epiphora can be eliminated with soft wire or other suture through a torn cancliculus. Lacerations of the cornea may be well repaired with new sutures and forceps. Prolapsed iris tissue can be replaced within the eye safely, thus avoiding loss of vision and deformed pupils. In seventeen such injuries in the past few years, ten have had no damage to the lens and each of these have better than 20/30 vision and round or almost round pupils. The other seven had badly damaged eyes and though the pupils were round, cataracts or other complications developed so that only two have useful vision. Three of the iris prolapses had been present for more than 20 hours before they were replaced into the eye. This would have been virtually impossible before antibiotics and cortisone and similar new agents plus specific instruments and technics.

Burns about the eyes may be healed better now with newer understanding of tissue healing. The stimulating effect of the sulphydrylradical such as found in hydro-sulfasol improves the end results in these works.

More rapid healing can be obtained in injuries, ulcers and abrasions with plasma–thrombin drops. Intractable cases of this nature have healed in a day or two after starting this new tissue glue which replaces lost cement substance destroyed or delayed in its formation by such things as lysosyme or bactorial action.

Late effects of trauma such as corneal scars may be replaced by corneal transplants which are now easy to perform because of the careful precise work of a few ophthalmic researchers.

Corneal ulcers respond to specific antibiotics if cultures and antibiotic sensitivity tests are performed. Scrapings and special tissue stains reveal other than bacteral infections such as trachoma which now clears with sulfa therapy.

Anterior segment inflammations will often be aided by specific medicaments using iontophoresis for rapid ion transfer and penetration.

Corneal vascularization virtually disappears with beta irradiation so that vision may clear remarkably with new apparatus using atomic energy by-products such as strontium 90.

Corneal physiology is better understood because of the fine work of Cogan and Kinsey with the result that it is known that the corneal stroma maintains its water balance by a simple method of osmosis with the ephithelum and endothelium acting as impermeable membranes. The anterior chamber and the aqueous humor are slightly hypertonic and the fluid constantly passes from the limbal vessels into the stroma and then out. Disturbances in this fluid balance may permit bullae to form on the surfaces of the cornea, markedly diminishing vision. Johnson in Cleveland has had remarkable improvement in these cases by eliminating the tears through section of the greater superficial petrosal nerve. A limited number of personal patients who have undergone this operation have

had some improvement of vision in badly disturbed eyes, and certainly have lost their bullae and had marked drying effect. The neurosurgeon has been able to help in a delicate, specific fashion at times. The other amazing things the neurosurgeon does to prevent blindness and aid ophthalmic conditions is a large subject.

Vitamins have been shown to aid in corneal nutrition, especially vitamins B and C. Iontopharesis has been advocated to incraese the local concentration of these elements, but it is likely that they must be first phosphorylated by a complex chemical process so the vitamins should be given parenteral injection or orally. Conjunctival conditions must be investigated in a fashion similar to corneal inflammations. In infections, smears and cultures should be made, and antibiotic sensitivity tests made. A brief analysis of 50 office cultures shows a variety of organisms responsible for some of the prolonged infections. About 25% of the cultures showed no growth. Staphylococcus, streptococcus, mixed staphylococcus and streptococcus, and micrococcus tetragenous were the most frequent organisms found. Chloromycetin and terramycin were by far the most useful treatments both by in vitro and in vivo trials, and the use of these new antibiotics hastened the curing of stubborn cases.

Conjunctional tumors are deceptive and should be removed as well as possible at biopsy, for it is impossible to differentiate them clinically. Many of both benign and malignant nature will respond to early beta irradiation. If neglected, a disfigurating exenteration of the orbit may become necessary to save life. Radium and x-ray must be used cautiously near the eye, as about 400 roentgens can produce a cataract. The Uveal tract also permits specificity in both diagnosis and treatment of its many and frequent dangerous afflictions. Woods at Johns Hopkins by clinical and experimental work simplified the designations of uveal disease. He divided most cases of uveal inflammations into two types--granulomatous and non granulomatous. These may often be differentiated clinically. Granulomatous lesions are caused by the lodging in the tissues of granuloma producing living organisms, such as tubercle bacilli, treponema pallida and the like. Non-granulomatous lesions are caused by a sensitization of the tissues by a previous exposure to a circulating toxin or bacterial product from a distant focus, with later exposure causing an acute exudative process. By careful examination the cause can be suspected and an investigation made to find the denite cause. The most common foci are probably teeth, tonsils, sinuses, genito urinary tract and gynecologic infections. Here the ophtholmologist must again direct the investigation.

Therapy must be guided by the results of the tests and special examinations. Penicillin in lues, streptomycin plus para amino salicylic acid (P.A.S.) in Tb, chloromyetin in brucellosis have been helpful in granulomatous uveitis, while antihistiminics, the various antibiotics, artificial fever therapies, and hormones assist the control of non granulomatous ones.

The older and still useful salicylates, iodides, milk injections must not be forgotten.

It is in uveal disease that ACTH and cortisone do their best work in ophthalmic usage. They combat the allergic elements and frequently eliminate the destructive phase, thereby preventing loss of vision. Spectacular results may occur with their use. These hormones sometimes fail to aid and can be dangerous, so their use is best directed by one familiar with their actions, such as the internist or family doctor.

Newer specific agents such as hyaluronidase, by its spreading effect assists local anaesthesia, and is especially useful in acute glaucoma where it may help bring down high tension to normal in a few minutes. (D.F.P.) diisopryl-fluorophoshate, is a new miotic which need only be instilled once in 24 to 48 hours, and is a valuable aid in helping to control chronic glaucoma. The visual field and other tests must of course guide ones treatment of this dangerous eye disease.

The field of ophthalmology is replete with the new and the specific in management of its many problems. All of them cannot be named here. Some are:

The newer oblique muscle surgery, corneal surgery, new cataract technics, new prosthotic ocular appliances and implants, improved plastic surgery methods, new optical lenses of plastic and hardened glass, contact lenses. Progress in every field of medicine is going forward. The research clinics are daily discovering newer methods and specificity remains the keynote of this progress.

# SECTION ON MEDICAL RESEARCH

## ARGINASE AS IN ANTI-CARCINOGENIC AGENT IN MICE AND HUMAN BEINGS

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### INTRODUCTION

Many significant relationships between arginase and the fundamental processes of life, (i.e.: regeneration and repair, growth and reproduction,) were observed by the author from research work undertaken in 1939 involving a study of these processes in lower animal phyla, where the potential of regeneration often approaches that of reproduction (40, 41, 49).

These observations, together with a review of the literature on the relationships of the amino acids to tumors, have led to investigations of arginine and its specific enzyme, arginase (27) and their physiological roles in the mammalian body, with special reference to tumor formation and growth. The results of these investigations form the basis of this paper.

*Protoplasm: Proteins and Amino Acids*

In such a study one must consider the importance of the chemistry of protein, as it is the basic constituent of protoplasm. In oncology the chemistry of protein must be considered both in normal and abnormal phases due to the fact that the point where normal processes end and neoplasia begins is often masked by the inflammatory reaction—the response of living tissues to irritation (12).

Arginine (alpha-amino-delta-guanidine-valeric acid) is a diamino-mono-carboxylic compound. It was first identified by Schulze and Steiger (29) in 1886. In the plant kingdom arginine is found abundantly in legumes, Brazil nuts, squash seeds, and almonds (50). In animal tissue it occurs in large quantities in the protamine of sperm and the tissues of thymus gland (24, 53, 55, 56).

*Arginine and Its Metabolism In Mammals*

In spite of extensive investigations on the subject, very little has been learned about the metabolism of arginase (26, 52). Arginase is the specific enzyme of arginine (27). It has not been found in lower animal phyla (40, 41), but is peculiar to mammalian physiology where the potential of regeneration is lowest in comparison to other animal phyla (40, 49). The amount of arginase produced by the liver has been shown to be directly influenced by the pituitary hormones, particularly the adrenocorticotropic hormone (ACTH) (17, 18). In the mammalian liver the hydrolysis of arginine to urea and ornithine is catalyzed by arginase (6, 8, 23, 34). The exact role of arginine in the formation of these two glucogenic substances (70) is not very well understood (11, 35). Recent studies have related arginine to the synthesis of creatine (7, 9, 10, 57). This research indicates that the amidine porton of the creatine molecule was derived from a similar portion of the arginine molecule (30, 32, 38, 57). In the muscle of certain species of lower animals phospho-arginine serves in a capacity similar to phosphocreatine (2, 3, 33, 51, 54, 64).

*Arginine and its Importance to the Fundamental Processes of Life*

The importance of arginine to the processes of life is indicated by the fact that it is present in varying concentrations in every protein reported to date (28, 52, 55, 56). Since it is abundant wherever reproductive and regenerative processes occur, its presence in the organism is considered by some to be a prerequisite for the occurrence of these processes (19). It has been shown that potentials of regeneration and repair occurring in the animal phyla vary inversely from the lowest to the highest (49). In the lower phyla, where regeneration often approaches the potential of reproduction, arginine, in free and combined forms, is found in large quantities (2, 3, 14, 15, 16).

Arginine is also thought to be responsible for the maintenance of normal growth rate in an organism (60, 65). It can be synthesized by most animal bodies (68) in quantities sufficient for slow growth, but, according to Rose (67, 68), not in sufficient quantity to maintain a normal growth rate (13, 60, 65, 66). When deprived of an arginine diet, the chick, which is incapable of synthesizing arginine (31), was unable to maintain normal growth, but when combinations of

EDITORS NOTE: This treatise has been accepted for publication in recognition of what appears to be an arduous piece of research. We are informed by the authors that this experimental study has begun on human beings.

this amino acid were added to its diet, growth was stimulated immediately (31, 62).

Since protamine, the simpler polypeptide found in sperm, is composed of 87.4% arginine (24, 53), a definite relationship is established between arginine and the process of reproduction. In the event of arginine deficiency, the arginine of the protamine of sperm may be diverted to use by other tissues. Even though the normal body requirements for the adult human male are 4.7 grams per day, (6), they are able to maintain a nitrogen balance on an arginine-deficient diet, but spermatogenesis is seriously impaired (61).

Recent observations of the reactions of those amino acids active in transamination—especially arginine—point to the additonal importance of this latter substance in the organism for maintenance of metabolism in protoplasm (36, 59, 72).

*Arginine and Its Relation To Tumorous Growths*

It has been observed that the arginine content of tumors may be twice that of normal tissues (47). The feeding of arginine to tumorous mice was found to promote tumor growth (20, 71), and to increase the number of "takes" in tumor implant (21). Similarly, its effect on isolated tissue cultures was to produce or stimulate mitotic cell division (42, 43, 4). An increase in the amount of free arginine was found to occur also in the tissues of both Rous and Jensen sarcoma, as well as in other types of tumors of mice, rats, and fowl (1, 45). An activity curve was produced when arginine and thyroxin was fed rats with tumor implants. It was found that arginine produced twice the stimulative effect that was observed when thyroxin alone was administered, and a combination of both substances produced three times the activating effect of thyroxin (22).

EXPERIMENTAL PROCEDURE.

1. *Tissue Cultures and Animal Implantations*

From results obtained in preliminary experiments upon tissue cultures, it was found that growth of cell colonies was stimulated in guinea-pig connective tissue cells. An increased number of cells of the mitotic variety appeared when arginine was incorporated in various forms in the culture media. Even direct introduction of virile guinea-pig sperm into the media resulted in an increased mitotic activity not evident in those cultures whose media were normal or contained thyroxin.

Subcutaneous and intraperitoneal implantation of these arginine-treated tissues in mice resulted in many "takes" which, histologically, resembled malignant neoplasms (42, 43).

2. *Effect of Arginase on the weight physiology of the Mouse*

To observe the elementary effect of arginase upon the weight physiology of the mouse, 20 Hamilton-strain white mice were used for controls and 20 others received subcutaneous and intraperitoneal injections of arginase solutions of various concentrations. The arginase used was prepared from fresh beef liver. The weight curve obtained indicated that the effect of the enzyme was directly proportional to the quantity of arginase units injected. Without exception, a lesion developed at the injection site, the size of which was directly proportional to the concentration and quantity of the enzyme (42).

This same experiment was repeated on C3H cancer-strain mice. Similar results were obtained, and it was observed that there was a measurable differential between the weight curves of the two groups. The difference indicated that there was a greater ratio of free arginine in the C3H cancer-strain mice than in the normal Hamilton-strain mice because a greater amount of arginase was required to produce similar results (44).

3. *Adenoid Mammary Tumor Occurrence Inversely Proportional to Units of Boby Arginase*

For over 6 months the records of a colony of 40,000 normal white Swiss mice were checked and it was noted that the rate of females to males developing adenoid mammary carcinomata was over 1000 to 1. In view of this, an equal number of male and female mice without tumor were sacrificed, weighed, skinned and eviscerated. The carcasses of each sex group were tested for tissue arginase. It was found that the males averaged 227.5 arginase units (63) per gram of body weight while the females averaged 93.5 arginase units per gram of body weight. These data were interesting because of their correlation with the tumor incidence in the different sexes, which thereby indicated a possible relationship between the arginine-arginase ratio and the occurrence of tumors.

4. *Effect of Arginase on Growth and Histology of Spontaneous Tumors*

The next experiment involved a study of the effect of arginase on the growth and histology of the constantly-occurring spontaneous tumors

(5, 25) in the colony observed. Observations recorded were macroscopic changes in size and appearance of the tumors and the host, histological changes in the tumors, and whether or not the animals died of their tumors after treatment. The mortality from spontaneous carcinoma, untreated in these mice, was 100%.

It was established that these tumors were mammary carcinomata. Macroscopically they occurred as large, soft, lobular masses in the mammary line on either side of the body from the cervical-axillary region to the groin. The lymphatic tissues in the region of the tumors were distended by swelling. Microscopically, they exhibited without exception, a cord-like arrangement of rapidly dividing cells (indicated by many mitotic configurations), a state of high vascularity, an absence of fibrosis, and a granular cytoplasm with definite, well-delineated cell walls. The cells were multinucleate with many nucleoli eccentrically placed. Staining techniques revealed no evidence of mineral deposition.

Amounts of arginase solutions varying from 5 to 250 arginase units per cc were administered by intraperitoneal injections to different groups of tumor-bearing cancer-strain mice. Some mice received only one injection while others received repeated doses at regular intervals.

It was found that noticeable results were obtained with injections as low as 9 arginase units, while the maximum tolerance level of the animals was established at 1200, given in dosages of not more than 240 arginase units every 24 hours. Except for those animals receiving dosages well above the maximum tolerance level, none of the injected animals died of their tumors. The large measurable tumors were permanently reduced in size from 30% to 70% while the smaller tumors visible before injection could be detected only by palpation. The tumors of the treated mice were palpably firm and the lymphatic tissues near them had been reduced to normal.

Dissection of these tumors revealed them to be highly avascular, granular, and gritty with mineral deposits. Differential staining methods (von Kossa) for calcium were positive.

A. *Calcium Deposition Proportional to A. U. Administered*

Observations in the above experiment indicated that, possibly, there might be a relation between the amount of arginase units administered and the amount of calcium deposition. Consequently, one animal was selected and given an arginase concentrate in three daily injections, the total arginase units exceeding the maximum tolerance of 1200. Five days later when the tumor was removed, decalcification was necessary before this mass could be sectioned for microscopic examination. This deposition of calcium in treated tumors is significant in that it has been reported that malignant tissue is singularly devoid of calcium (48).

B. *Direct Injection of Arginase into tumors*

Since it has been suggested that the ornithine formed by arginine metabolism destroys the catalytic action of arginase (37), it was decided to inject a controlled amount of the enzyme directly into a large tumor to study the effect of the buffering action of ornithine that might be thus formed. The tumor selected was a large spontaneous mammary carcinoma extending from the axillary region down the foreleg to the foot of the animal, and 9 arginase units were injected directly into the medial half of the tumor.

The results were similar to those obtained by intraperitoneal administration of arginase. Within three days the tumor, which at time of injection was quite uniform in shape, had become gourd-like, with the smallest pole located proximally. Histological examination showed the distal portion to be typically malignant, while the proximal half presented a picture of innocence.

5. *Effect of Arginase on Growth and Histology of Mammary Carcinoma Implants in C3H Cancer-strain Mice*

The results obtained from this experiment were to be compared with those of Experiment 4.

30 C3H cancer-strain mice received mammary carcinoma implants in the flank. 11 days later, when the tumors had become well established, the animals were separated at random into three groups of 10 each, and the groups were separately designated "A", "B", and "C". Group "A" was used as the control. Group "B" received daily intraperitoneal injections of 1cc of arginine solution, which contained 0.16 M of arginine monohydrochloride in 0.1 M phosphate buffer solution at pH 7.5 Group "C" received daily intraperitoneal injections of 1cc (60 arginase units) arginase solution, which had been obtained from extract of beef liver and activated

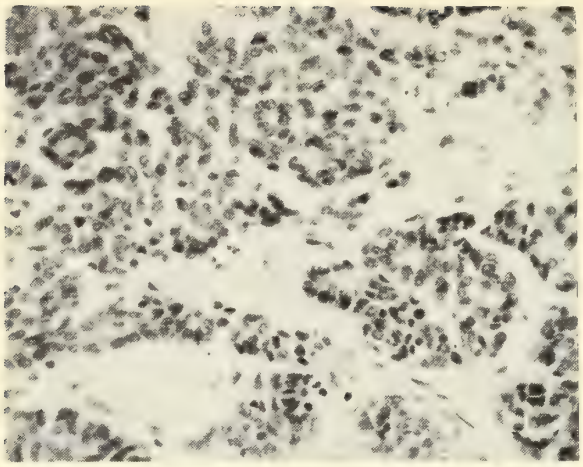


Figure 1. Malignant phase. Section of Spontaneous Adenocarcinoma before intraperitoneal injection of Arginase (x450). W. G. Irons.

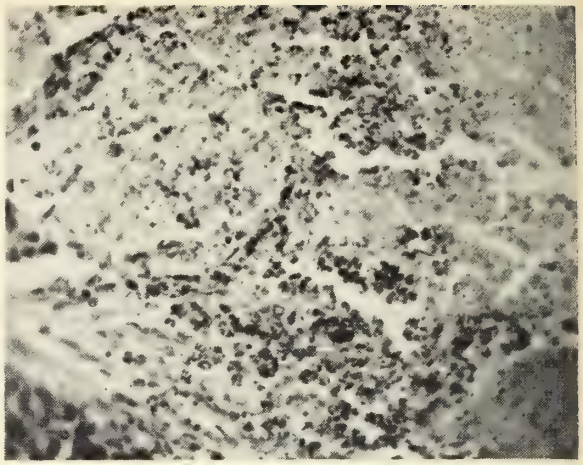


Figure 2. Innocent Phase. Section of Spontaneous Adenocarcinoma ten days after receiving intraperitoneal injections of arginase. (x450). W. G. Irons.

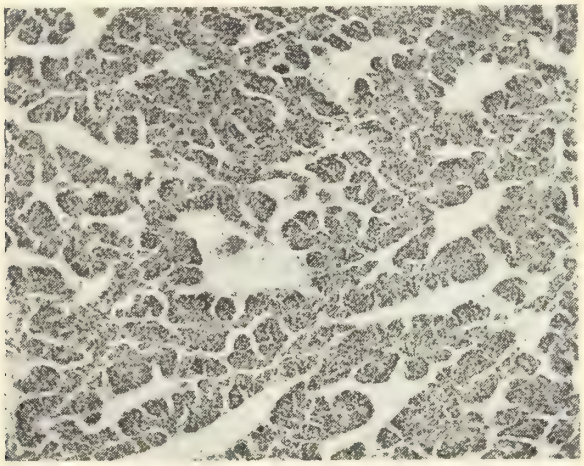


Figure 3. Malignant Phase. Section of Mammary Adenocarcinoma implant before intraperitoneal injections of arginase exhibiting the typical glandular arrangement of tumor cells (x80). W. G. Irons.

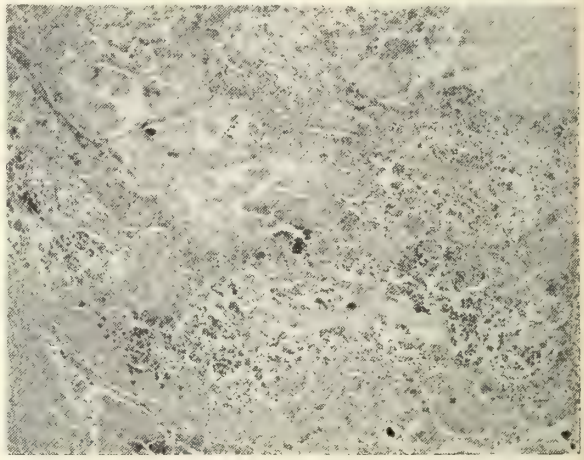


Figure 4. Innocent Phase. Section of Mammary Adenocarcinoma after daily intraperitoneal injections of one cc. of arginase solution containing 60 A.U. for ten days (x80). The treated animals did not die of their tumors as did those of the control groups. W. G. Irons.

by 1.25 mg of cobaltous ion per cc of extract for 3 hours at 40°C.

The experiment was continued until the last mouse of both the control groups ("A" and "B") had died of tumor 21 days after implantation, thus the injections extended over a period of ten days. At the end of this period all 10 of the mice receiving arginase ("C") were alive and active. Although injections were discontinued in this group at this time, daily measurements of the tumors were continued for an additional 10 days, at which time the mice were sacrificed for histological observations. During this period the growths did not increase in size and the animals appeared to be healthy.

During the 10-day experiment each animal of the three groups was weighed daily and its tumor measured with calipers. The following table was compiled from the averages of each group obtained over the 10 day injection period.

In Experiment 4, the tumors of the mice not receiving arginase (Groups "A" and "B") exhibited a high state of malignancy (see Fig. 3), while those receiving arginase were innocent (see Fig. 4).

In the animals of Group 'C" a 28% over-all reduction in the size of the tumors was observed, while the ratio of tumor length to tumor weight was 26% lower than in Group A. In the arginine recipients (Group "B") the ratio of tumor length to tumor weight was increased 7.9%.

The tumors of the arginase recipients were encapsulated, definitely enough to be neatly separated from the surrounding tissue, and sectioned. Extensive fibrosis gave an appearance of disorganization to the tumor cells and the cytoplasm was clear and syncytial in nature. The cell nuclei appeared larger and paler, and ex-

| Group | Average Body Wt. On day indicated | | Tumor Length on day indicated | | Tumor Wt. at Post | Tumor Growth from day of implant | % Growth Compared to "A" | Ratio Tumor L/W in % |
|---|---|---|---|---|---|---|---|---|
| | "0" | "10" | "0" | "10" | | | | |
| "A" | 29.5 | 35.0 | 15.2 | 37.1 | 6.4 | 37.1 | 100% | 100% |
| "B" | 32.6 | 34.8 | 21.7 | 38.8 | 6.2 | 38.8 | 104.5 | 107.9 |
| "C" | 31.4 | 34.8 | 18.8 | 26.7 | 6.1 | 26.7 | 72.0 | 74.1 |

(L) – Length expressed in mm. (Growth refers to length increased in mm.).
(W) – Weight expressed in grams
Group A – Controls
Group B–Arginine Recipients
Group C – Arginase Recipients

hibited a single nucleolus, centrally located. The tumors demonstrated increased amounts of connective tissue, areas resembling embryonic-type mesenchymal tissue, and large areas of necrosis without liquefaction. Differential staining techniques showed these areas to be filled with heavy desposits of calcium.

## SUMMARY

As might be expected from the tremendous amount of research on relationships between amino acids and the fundamental processes of life, interpretations are quite controversial (35, 69). However, arginine is known to be present in every protein and has been found to be of considerable importance to these basic processes of life, since in its absence either these processes do not occur at all or are seriously impaired. The most significant relationships that are generally agreed upon to exist between arginine and tumor formation appear to be:

1) the presence of large amounts of arginine and the absence of arginase in lower animals with multipotent regenerative powers (2, 3, 14, 15, 16, 39, 40, 41, 46, 49, 54, 64);
2) the high arginine content (87.4%) of the spermic protamines and the accompanying totipotency of the receptive ovum (24, 43, 42, 58, 61);
3) the arginine content of tumors may be twice that of normal tissue (47);
4) the introduction of arginine into the body of the animal is found to promote tumorous growth (20, 71).

Therefore, in view of these relationships, investigation was instigated of the effects of arginine and its enzyme, arginase on tumor formation and growth.

From experiments involving the intraperitoneal injection of arginase solution into both cancer-bearing $C_3H$ and white Swiss mice, it was found that, contrasted to the characteristics typical of highly maligant tumors in the controls, the tumors from the animals treated with arginase, besides preventing death from tumors, demonstrated without exception the following salient characteristics:

1) A 28% reduction in general tumor growth, and a decrease of 26% in the ratio of tumor length to tumor weight.
2) An encapsulation definite enough to permit their neat separation from the tissues of the animal without incidence and to permit sectioning of the exfoliated capsule.
3) Fibrosis extensive enough to give an appearance of disorganization to the tumor cells.
4) A clear and syncytial cytoplasm throughout the entire area of the tumor.
5) Benign fibro-adenoma, with increased amounts of connective tissue, and large areas of necrosis without liquefaction.
6) Large, pale nuclei with single, centrally-placed nucleolus.
7) Heavy calcium deposition through the tumor mass.

Arginase solution directly injected into the tumor mass was found to produce effects indentical with that administered intraperitoneally.

For a visible comparison between the histology of the innocent phase exhibited by the tumors from the treated mice, and the malignant phase exhibited by those from the controls, see Figures 1 and 2; 3 and 4.

Autonomy is the cardinal property of both the fertilized ovum and the malignant cell, however, the fertilized ovum is totipotent while the

malignant cell is unipotent, except in the case of cells of mesodermal origin in which there is an inherent multipotency.

It might be concluded that the presence of the amino-acid arginine as nucleo-protein is responsible for the process of autonomous growth.

## Biological Abstracts
## ARGININE-ARGINASE SYNDROME AND MALIGNANCY

In view of the observations that (1) large amounts of arginine are present in lower organisms with multipotent regenerative powers while no arginase has been found, (2) the protamines contain large amounts of arginine which, after fertilization, results in totipotent ova, and (3) the arginine content of tumorous tissue may be twice that of normal tissue, experimentation was instigated on the effects of arginine and its specific enzyme, arginase, on tumor formation and growth. These experiments involved the intraperitoneal injection of arginase solution into both cancer-bearing $C_3H$ and white Swiss mice. It was found that, contrasted to the characteristics typical of highly malignant tumors which caused the death of the controls within 11 days, the tumors from the surviving animals—those treated with arginase solution—demonstrated without exception (1) a 28% reduction in general tumor growth, and a decrease of 26% in the ratio of tumor length to tumor weight, (2) an encapsulated definite enough to permit their neat separation from the tissues of the animal without incidence and to permit sectioning of the capsule, (3) extensive fibrosis, which gave an appearance of disorganization to the tumor cells, (4) a clear and syncytial cytoplasm throughout the entire area of the tumor, (5) benign fibro-adenoma, with increased amounts of connective tissue, small areas of embryonic-type mesenchymal tissue, and large areas of necrosis without liquefaction, (6) large, pale nuclei with single, centrally-placed nucleolus, and (7) heavy calcium desposition throughout the tumor mass. Arginase solution directly injected into the tumor mass was found to produce effects indentical with that administered intraperitoneally.

### BIBLIOGRAPHY


1. Annau, E., and Gozsy, B. 1934. Ztschr. f. Krebsforsch, 40, p. 572.
2. Arnold, A., and Luck, J. Murray. 1933. Journal Biological Chemistry, 99, pp. 677-691.
3. ———. pp. 677-691.
4. Bach, S. J., and Lasnitzki, I. 1947. Enzymologia, 12, pp. 198-205.
5. Bittner, J. J. 1936. Science, 84, p. 162.
6. Block and Bolling. 1944. Journal American Dietic Association, 20, p. 69.
7. Bloch K. and Schoenheimer, R. D. 1941. Journal Biological Chemistry, 138, p. 167.
8. Bollman, Mann, and Magath. 1924. American Journal Physiology, 69, p. 371.
9. Borsook and Dubnoff. 1940. Journal Biological Chemistry, 132, p. 559.
10. ———. 1941. Journal Biological Chemistry, 138, p. 389.
11. ———. 1943. Annual Review Biochemistry, 12, p. 138.
12. ———. 1947. Textbook of Pathology. Philadelphia: Lee and Febiger, p. 249.
13. Bunney, W. E., and Rose, W. C. 1928. Journal Biological Chemistry, 76, p. 534.
14. Edlebacher, S. 1942 Biochemistry and Morphogensis, Oxford Press
15. Eggleton, G., and Eggleston, P. 1927. Journal Biological Chemistry, 20, p. 190.
16. ———. 1927. Journal Physiology, 63, p. 155.
17. Fraenkel-Conrat, H.; Simpson, M. E.; and Evans, H. M. 1943. American Journal Physiology, 138, No. 3 (Feb.), pp. 439-449.
18. ———. 1943. Journal Biological Chemistry, 147, No. 1 (Jan.) pp. 99-108.
19. Gilroy, E. 1930. Journal of Biochemistry, 24, p. 1181.
20. ———. pp. 1384 and 1659.
21. ———. pp. 589 and 1659.
22. ———. p. 1183.
23. Gornall, A. G., and Hunter, A. 1943. The Synthesis of Urea in the Liver, Journal Biological Chemistry 147, p. 593.
24. Gortner, R. A. 1938. Outlines of Biochemistry. New York: John Wiley and Sons, pp. 406-407, and 464-466.
25. Greenstein, J. P. 1947. Biochemistry of Cancer. New York: Academic Press, p. 119.
26. Harrow, B. 1942. Textbook of Biochemistry. Philadelphia; W. B. Saunders Company, p. 293.
27. ———. P. 93.
28. Hawk, P. B.; Oser, B. L.; and Summerson, W. H. 1948. Practical Physiological Chemistry. Philadelphia; The Blakiston Company, p. 141.
29. ———. P. 136.
30. ———. P. 732.
31. ———. P. 951.
32. ———. P. 240.
33. ———. P. 239.
34. ———. P. 952.
35. ———. P. 953.
36. ———. P. 948.
37. ———. P. 270.
38. Hunter, A., Creatine and Creatinine, Lorgmans, Green & Co. 1928. London and New York P. 227.
39. Hunter, A., and Dauphinee, J. A. 1927. Proceeding of the Royal Society 97, P. 218-226.
40. ———. P. 236.
41. ———. P. 237.
42. Irons, W. G. 1946. Journal of Dental Research, 25, No. 6 (Dec.) p. 497.
43. ———. 1946. Journal of Dental Research, 25, (3):180 (June), title 68.
44. Irons, W. G., and Wiswell, C. B. 1947. Science, 106 (Oct. 24), P. 2756.
45. Klein, G., and Ziese, W. 1932. Ztschr. f. Krebsforsch, 37, p. 323.
46. Klose, Stokstad, E. R. and Almquist, H. L. 1938, Journal Biological Chemistry, 123, p. 691.
47. Kocher, B. A. 1915. Journal Biological Chemistry, 22, p. 285.
48. Lansing, A. I. 1947. Science, 106, (Aug. 29). No. 2748, pp. 187-188.
49. MacCallum, W. G. 1932. Textbook of Pathology. 5th Edition. Philadelphia: W. B. Saunders Company, p. 190.
50. Mathew, A. P. Mathew's Physiological Chemistry, 5th Edition. Baltimore: Williams and Wilkins, pp. 135-136.
51. Meyerhof, O.; and Lohmann, K. 1928. Biochemistry Z. 196, pp. 22 and 49.
52. Mitchell, P. H. 1946. A Textbook of Biochemistry. New York; McGraw Hill Book Company, p. 455.
53. ———. P. 97.
54. ———. P. 381.
55. ———. P. 455.
56. ———. P. 139.
57. ———. P. 459.
58. ———. P. 138.
59. ———. P. 440.
60. ———. P. 438.
61. ———. P. 439.
62. ———. P. 99.
63. Mohamed, M. S. and Greenberg, D. M. 1945. Archives of Biochemistry, 8, pp. 349-364.
64. Peters, J. P., and VanSlyke, D. D. 1946. Quantitative Clinical Chemistry Interpretations, Vol. 1, 2d Edition. Baltimore: Williams and Wilkins, p. 123.
65. Peterson, W. H.; Skinner, J. T.; and Strong, F. M. 1943. Elements of Food Biochemistry. New York: Prentice Hall, p. 141.
66. ———. P. 115.
67. Rose, W. C. 1937. Science, 86, p. 298.
68. Rose, W. C.; Haines, W. J.; and Johnson, J. F. 1942. Journal Biological Chemistry, 146, pp. 683-684.
69. Stern, K.; and Wilhelm, R. 1943. The Biochemistry of Malignant Tumors. Brooklyn, New York; Reference Press, pp. 352-356.

70. Stetten and Schoenheimer, R. 1944. Journal Biological Chemistry, 153, p. 113.
71. Suzuki, K.; and Miyao, S. 1933. Tr. Japanese Pathological Society, 23, p. 671.
72. Williams, H. L.; and Watson, E. M. 1946. Revue Canadienne de Biologie, 5, No. 3, pp. 265-269.

# PHOENIX Clinical CLUB

## MASSACHUSETTS GENERAL HOSPITAL CASE NO. 29132

**The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.**

A twenty-seven-year-old married dentist was referred to the hospital because of fever and a persistent nonproductive cough of six weeks' duration.

The patient had always been in excellent health until three months before admission when during the summer, without known precipitation factors, he experienced a sharp pain that began in the right shoulder but soon settled in the anterior right chest. This was made worse by deep respirations and movements of the trunk. Six weeks before admission he suddenly developed a nonproductive irritating cough but did not have an upper respiratory infection. This continued to the day of admission without any change in severity and did not respond to cough medicine prescribed by his physician. Two weeks before entry the physician found that the patient's temperature was 100.2°F., the pulse 120, and the respirations 30. Chest films at another Boston hospital were said to have revealed "a mass in the right lung that was cystic and contained fluids". During the week prior to admission he had a daily temperature elevation to 101°F. and drenching night sweats. There was no hemoptysis, weight loss, palpitation, dyspnea, chills or cyanosis.

The family history was noncontributory. The patient was born in Boston and had lived there most of his life.

Physical examination disclosed a well-developed and well-nourished man in no apparent distress. The trachea was in the midline; the chest seemed symmetrical, but there was some lag in expansion on the right. There were dullness and diminished breath sounds on the right side to the level of the eighth rib posteriorly and the clavicle anteriorly. Scattered crackling rales and bronchovesicular breathing were audible in the midcapular region. Examination of the left lung, heart and abdomen was normal. There was minimal clubbing of the fingers.

The blood pressure was 130 systolic, 82 diastolic. The temperature was 98.6°F., the pulse 120, and the respirations 35 The pulse and respirations remained rapid throughout hospitalization. The temperature rose to 100.4°F., but did not rise in abrupt sharp peaks.

The hemoglobin was 12 gm. per 100 c.c., and the white-cell count 16,900. The urine was acid in reaction and had a specific gravity of 1.020; the sediment contained rare red and white cells. The blood Hinton test was negative.

A chest roentgenogram disclosed a 12 by 15 cm. smooth, homogeneous mass that filled the anterior two thirds of the lower right chest and rose to the level of the second rib anteriorly. The mass appeared to arise from the anterior mediastinum on the right side. The right main bronchus and its subdivisions were not grossly abnormal. There was a small amount of fluid in the right pleural space. The left lung field was clear; the heart was not definitely abnormal and the left diaphragmatic shadow appeared normal. There was no evidence of mediastinal shift or of esophageal displacement.

An operation was performed on the ninth hospital day.

DR. ROBERT S. FLINN:

This 27 year old dentist entered the hospital because of nonproductive cough of 6 weeks duration. Three months before admission he had pain in the right chest. Six weeks before admission he developed a nonproductive irritating cough which did not follow an upper respiratory infection. His temperature rose to 101; there was no blood spitting; weight loss; palpitation; dyspnea; chills nor cyanosis. X-ray of the chest showed a smooth homogeneous mass that filled the anterior two-thirds of the lower right chest and rose to the level of the second

rib anteriorly. This mass appeared to arise from the anterior mediastinum on the right side. The right main stem bronchus and subdivisions were not grossly abnormal. The left lung field was clear.

Gray, Shepard and Dockerty say that: "The division of the mediastinal space into three compartments is a delineation which serves more than its originally pure antomic purpose. Tumors arising in each of these spaces bear certain marks of distinction which permit of their general classification according to the situation. Thus the anteror mediastinum is the site of election for dermoid and thymoma. The middle mediastinum is the site of bronchogenic carcinoma and lymphosarcoma. From the structures of the posterior mediastinum arise lymphosarcoma and neoplasms such as neurofibroma and ganglioneuroma whose origin may broadly be considered under the term 'neurogenic'". To this list we can add to the anterior mediastinum thyroid cyst, aneurysm, sarcoma and metastatic carcinoma and to the list of the posterior mediastinum lesions lymphosarcoma, aneurysm, lipoma and metastatic carcinoma.

If we accept the x-ray interpretation on its face value, namely, that this mass arose from the anterior mediastinum, we can at once dismiss such malignant and benign lesions of the lung such as bronchogenic carcinoma, mixed tumor, sarcoma and fibrosarcoma and benign adenomatous bronchial tumors. Indeed, since this tumor mass arose from the mediastinum, we can dismiss everything except tumors and cysts of the mediastinum.

It is proper to discuss mediastinum tumors and cysts as a group, even though they comprise a large number of lesions that are patholo gically unrelated. Significant is the fact that few of the reported cases have been observed in the later decades of life. This would seem to indicate that these lesions, untreated, are generally incompatible with longevity. Since there tends to be great similarity in the clinical manifestations of all of these tumors, one is concerned primarily with differentiating the benign and malignant lesions for which surgery offers some prospect of cure from those for whch it is definitely out of the question.

The first symptoms and signs of mediastinal tumors and cysts are generally attributable to the fact that they displace and compress adjoining structures. Growth is frequently very slow, permitting gradual adjustment to pressure changes. A patient who has harbored a mediastinal neoplasm from birth is often entirely unaware of changes due to pressure until he has reached the third or fourth decade of life, when the growth may have attained tremendous size. An expanding mass in the mediastinum will, in the course of time, manifest itself by producing a sense of fullness or tightness in the chest and eventually pain. The pain may be dull or sharp, localized or widely referred. Pressure on the trachea or bronchi will give rise to a dry, irritative cough. Wheezing may appear as the airway becomes narrowed, and increasing shortness of breath may be noticed. Dyspnea is a common early symptom and sometime seems to be out of proportion to the size of the mass. Erosion into bronchus or lung may cause hemoptysis or even severe hemorrhage. Cysts rupturing into a bronchus will discharge their contents and are then likely to become secondarily infected. Occasionally infection occurring within a cyst, even without the presence of a bronchial communication, will give rise to the first symptoms of the condition.

Among the most interesting lesions of the mediastinum are those resulting form developmental aberrations, particularly the teratodermoid group of tumors and cysts. These are derived from the ectoderm and sometimes include elements of mesodermal and endodermal derivation.

The vast majority of intrathoracic teratodermoid tumors originate in the anterior mediastinum, directly behind the sternum and in front of the pericardium and great vessels. Rarely they are found in other locations. X-ray evidence of calcification within the wall of a teratodermoid cyst is frequent, while tooth and bone formation with a mediastinal tumor is diagnostically specific. Air and a fluid level may be demonstrated within such a cyst which has ruptured into a bronchus. Since their growth tends to be very slow, unless infection or malignant degeneration supervenes, pressure symptoms generally do not become evident until the second, third, or fourth decade of life. Unless removed, these tumors nearly always cause death before the fifth decade.

The contents of a teratodermoid cyst may become infected spontaneously, presumably by a hematogenous route, whereup the cyst is likely to increase rapidly in size. Pressure as well as

toxic symptoms become prominent and rupture into a pleural cavity or a bronchus may prove rapidly fatal. More often infection is secondary to rupture of the cyst into a bronchus with development of a bronchocystic fistula. Such rupture may manifest itself by expectoration of sebaceous material, cholesterol crystals and hair, an event pathognomonic of this condition. Strangely enough, cysts with bronchial communication may exist for years undiagnosed. The signs and symptoms of chronic bronchopulmonary suppuration may or may not be present. A history of expectoration of hair may be elicited only through specific questioning and the diagnosis may not be established prior to surgical intervention.

Extirpation provides the only satisfactory management of teratodermoid tumors and cysts. X-ray therapy is of no value.

BRONCHOGENIC CYSTS. These cysts are considered to arise through the pinching off of a bud of the foregut in the embryo. Most frequently they arise in the middle portion of the mediastinum in relation to the trachea or major bronchi. Similar cysts whose walls are also lined with ciliated columnar epithelium like that of the respiratory tract, are found in relation to the esophagus.

Symptoms, if any, are generally due to pressure on the trachea, bronchus or esophagus, producing shortness of breath, cough, or dysphagia. Generally these cysts cannot be differentiated clinically from other lesions of the mediastinum and their removal is indicated for dagnosis and for the relief of the symptoms.

GASTO-ENTEROGENOUS CYSTS. Among the rarer cysts of the medastinum are those with linings resembling gastric or enteric mucosa. Pressure symptoms and pain are likely to occur, particularly if there is a functional secretory activity of the lining. Peptic ulcer with perforation has been reported.

BENIGN TUMORS OF THE THYMUS. Benign thymoma is a rare tumor of the mediastinum. By x-ray study it generally appears as a flattened density in the superior anterior mediastinum directly behind the sternum. Whether discovered on a routine x-ray or as a result of pressure symptoms, resection is indicated as with all benign mediastinal tumors.

MALIGNANT TUMORS OF THE THYMUS. Lymphosarcoma, carcinoma, Hodgkin's disease and teratoid tumors are described as originating in the thymus gland. These lesions are often difficult to classify, for it may be impossible to determine whether they are primary in the thymus or elsewhere. Well-defined solitary tumors which may be of thymic origin should be removed, if possible.

MEDIASTINAL THYROID. Adenomas of the thyroid, particularly those occurring at the lower poles, will occasionally descend gradually into the anterior mediastinum.

MEDIASTINAL PARATHYROID ADENOMAS. Cope reported 58 parathyroid adenomas in 54 patients. Of these 11 were found in the anterior mediastinum. However, these tumors are rarely large enough to be demonstrable by x-ray.

CONNECTIVE TISSUE TUMORS. These include fibromas, lipomas, xanthomas, chondromas, etc., with their malignant counterparts. Usually they are slow in growth and they may attain huge size (particularly the lipomas) before symptoms become manifest. Symptoms, when present, are generally those of compression. These tumors cannot be differentiated clinically. Removal is always indicated when feasible.

LYMPHOSARCOMA. When this rapidly progressive fatal disease is primary in the mediastinum the tumor usually grows with rapidity and eventually fills the entire mediastium, surrounding and compressing the great vessels, bronchi and other structures. Diagnosis may be difficult during the early stages of the disease, unless an involved peripheral lympth node is available for biopsy. Lymphosarcoma is one of the most common malignancies of the mediastinum and the diagnosis should be suspected when there is bilateral widening of the anterior or middle mediastinum by a tumor with irregular or lobulated borders. In suspected cases a therapeutic test with x-ray is indicated. Rarely a mediastinal lymphosarcoma presents itself as a unilateral circumscribed mass, simulating one of the benign tumors or cysts that have been discussed before.

In the differential diagnosis of mediastinal tumors and cysts one must keep in mind mediastinal and paravertebral abscesses and infectious granulomas such as tuberculomas, or sarcoidosis with mediastinal lymphadenopathy. Echinococcal cysts may simulate the cysts above described. Aneurysms of the aorta or one of its branches may sometimes present a diagnostic

problem, particularly if expansile pulsation of the mass cannot be demonstrated fluoroscopically.

My diagnosis is tumor of the anterior mediastinum. I do not see how it is possible to distinguish between teratodermoid cyst or bronchogenic cyst but because of the age of the patient, the symptoms and especially from a percentage standpoint, I will take teratodermoid cyst as my first and only diagnosis.

## DIFFERENTIAL DIAGNOSIS

Dr. Austin Brues: I have called briefly the significant points in this short report. We have a twenty-seven-year-old dentist who, for three months, had anterior chest pain heralded in by shoulder pain, pleural in type, which was increased by respirations and by movements of the trunk. Six weeks before entry he developed a cough, fever was first noted, which was of a mildly septic type. After that he had tachycardia and rapid breathing, but no general prostration. There was a mild anemia, and a minimal clubbing of the fingers; physical and x-ray examinations agree in the mass in the right anterior chest coalescent with the mediastinum, with a small amount of pleural fluid on that side. There are also two collateral observations that I should like to bring up. First the outside x-ray films which, using legal terminology, we might call "hearsay evidence," which may be important. The description given us is that of a cyst containing some fluid, and we should suspect that such a definite description would have been made only if a fluid level had been observed. We therefore have hearsay evidence that, at that time, instead of a solid lesion there was one which was thought to contain fluid and perhaps had a fluid level. The second collateral observation we may class in accordance with our legal analogy as "circumstantial evidence". an operation was performed. The operation must have revealed something of sufficient significance to the Pathology Department to make it the subject of a clinicopathological conference. In other words, something more than pus must have been found.

One bit of evidence that is lacking is a blood smear. Perhaps it was not made. It might encourage or discourage certain diagnosis that I think for other reasons are improbable—namely, tuberculosis, in which the granulocytes are relatively low and the monocytes high; parasitic disease, which is usually accompaned by an eosinophilia; Hodgkin's disease, which often shows a high granulocyte count and possibly eosinophilia; and leukemia, in which a smear may give obvious evidence of the condition.

Dr. Tracy B. Mallory: The white-cell count was 12,400, with 79 polymorphonuclear leukocytes, 11 small lymphoctyes, 8 monocytes, and 29 eosinophils. The red cells and platelets appeared normal.

Dr. Brues: We have a process limited to the right chest with initial pain suggesting pleural involvement. I do not believe there was massive pleural involvement, such as we might expect with an endothelioma of the pleura, because of the small amount of fluid that is reported. We do however expect to find something encroaching on the pleura and giving the first symptom in that way.

I should like next to consider fever as a symptom. This suggests primary infection, some lesion secondarily infected or a series of other conditions that might be febrile, such as Hodgkin's disease, sarcoid and metastatic disease; of the latter, Ewing's tumor is the only commonly febrile representative and is out of the question without evidence of a primary lesion. I shall pass over sarcoid, and say in connection with Hodgkin's disease that the reported nonlobulated configuration of the growth, the fact that pain was the first symptom and occurred long before the others, and the fact, if true, that a fluid level was seen are against the diagnosis. Furthermore, fever in Hodgkin's disease is usually observed either in advanced cases or in cases with posterior rather than anterior mediastinal involvement.

It might be appropriate to take up the x-ray films at this point.

Dr. George W. Holmes: The films that I have put up cover a period of about three months. They show a very large mass that occupies the midchest. In the anteroposterior view it also appears to be in the midportion rather than in the front or back. It is of some interest that a mass as large as that does not displace the heart. We might assume that the lung was collapsed behind it, so that we do not see it, and that one compensates the other and there is no displacement. There is evidence in this film of a small amount of fluid in the pleural space. The mass is homogeneous, with sharply defined borders, and is not lobular.

Dr. Brues: Does this exhibit include the plate

taken in the outside hospital on which I was speculating?

Dr. Holmes: No. Of course that would be of great value.

In the spine the fifth lumbar vertebra has a narrow posterior portion. I do not believe that this represents metastatic malignancy.

Dr. Brues: We must still consider primary infections and secondarily infected processes. I shall first mention the possible primary infections. There was no history of pneumonia, and the x-ray films do not suggest that the lesion was of that type. The course was not septic enough to suggest a large encapsulated empyema, and I suspect that the rounded lower border of the mass by x-ray makes an interlobar accumulation of fluid or pus unlikely.

Tuberculosis, of course, is suggested by the first few lines in the record. The significant point against tuberculosis is the absence of disease in the apices. One might also think of two other processes similar to tuberculosis but without the same tendency to occur in the apices—actinomycosis and streptothricosis. Either of these, however, should give greater prostration.

An amebic abscess working its way up from the liver is indicated in the beginning of the history since the pain occurred in the shoulder, suggesting something in the region of the diaphragm. One might think of an amebic process passing from the liver through the diaphragm, settling in the lung and giving these symptoms. Again, one would expect considerable prostration.

Against echinococcal disease is the fact that the patient was apparently a confirmed Bostonian.

Did he have a lung abscess? Such a process would have been walled off rather thoroughly, since there was no sputum, which is strongly against the diagnosis. Furthermore, the x-ray films show no particularly marked degree of infiltration around the process.

The fact that the fever occurred late suggests a secondary process. Cancer of the lung, centrally located, can be walled off so that no sputum appears, but this is unusual. The patient was young for cancer to occur, but not too young. In its favor is the lack of displacement of the mediastinum, such as may occur in an infiltrative lesion. Against it, for the same reason, is the absence of infiltration in other directions.

Two other processes start early in life and give their peak incidences of trouble in the third decade, namely, congenital cystic disease and dermoid cyst. Both of these may show a fluid level at some time. Dermoids are particularly likely to occur in the anterior part of the chest coalescing with the mediastinal shadow and appearing low in the lung fields. One would expect a dermoid to displace the mediastinum to the opposite side, and that worried me somewhat, but I was inclined to pass that off, and Dr. Holmes has given me assistance in doing so. Therefore, because of the age, the location, the recent febrile course, the absence of sputum and the lack of definite evidence against it, I shall make the diagnosis of dermoid cyst, secondarily infected.

Dr. Mallory: What was the line of argument before operation, Dr. Brown?

Dr. Robert K. Brown: We thought the lesion probably was a dermoid cyst. The patient was extremely sick when he came in. His pulse is recorded at 120, but it ranged from 120 to 140 and did not go down after a week's rest in bed. The temperature went up and ranged from 100 to 102°F., not a definite septic temperature. Dr. Churchill thought that the patient was not in condition for open thoracotomy such as would be required in an attempt to remove the whole lesion, and decided merely to explore under local anesthesia through an anterior incision.

Dr. Mallory: I think you might as well go ahead and tell the operative findings.

Dr. Holmes: May I say a word first? If you arrive at a diagnosis of cyst there are some points in the x-ray examination that may help to decide between dermoid and other forms of cyst. For instance, an echinococcal cyst usually has calcified walls, and a dermoid cyst often shows variations in density within the cyst itself, such as teeth and areas of markedly diminished density due to fat. Although the latter may also look just like this one, the absence of variations in density is perhaps against it.

Dr. Richard Sweet: I have just taken a dermoid cyst out of a mediastinum that showed marked calcification in the wall.

CLINICAL DIAGNOSIS

Dermoid Cyst.

DR. BRUES'S DIAGNOSIS

Dermoid cyst, secondarily infected.

ANATOMICAL DIAGNOSES

Teratoma of mediastinum, with extension to middle lobe of right lung and metastases to liver and vertebras.

Pathologic fracture of fifth lumbar vertebra.

Collapse of right lung, massive.

Bronchopneumonia, slight, of left lung.

Ascites.

Operative wound: exploratory thoracotomy.

PATHOLOGICAL DISCUSSION

Dr. Mallory: Will you tell us the operative findings, Dr. Brown?

Dr. Brown: A large mass was found with a solid wall about 1 cm. thick and a necrotic center consisting of gray mushy material.

Dr. Mallory: A biopsy specimen showed a tumor which in part appeared to be carcinomatous with some rather poorly formed glands, which were enough to justify one in thinking of it as adenocarcinoma. Other portions of the tumor were composed of long spindle cells that looked fibroblastic. We though we were probably justified in assuming that there were two kinds of cells and that this was therefore an undifferentiated teratoma rather than a carcinoma. Following that, x-ray treatment was given. Dr. Brown will tell the rest of the story.

Dr. Brown: The lesion did not change with 1,000,000-volt x-ray therapy, even in large dosage. In two months he came in again with a pathologic fracture of the fifth lumbar vertebra, which was treated by x-ray; the patient was put in a plaster shell. Two months later he came back terminally, with a large liver and ascites; he died in six days.

Dr. Mallory: At post-mortem examination we found a large tumor in the anterior mediastinum projecting into the pleural cavity. It was very firm and was adherent to the middle lobe of the right lung, and on section it was possible to show that it had invaded the middle lobe. That left two possibilities—it was either a mediastinal teratoma with secondary invasion of the lungs or a primary carcinoma of the lung spreading into the mediastinum. It seemed to us from gross examination that the latter was unlikely since the tumor was largely at the periphery of the lung and the bronchi were entirely uninvolved, carcinoma of the lung with negative bronchi being, of course, a rarity. Coupling that with the peculiar histologic character we felt justified in continuing to call this a teratoma. There were extensive metastases to the liver and bone marrow, and the fifth lumbar vertebra was involved; there was nothing else of interest. The tumor was perfectly solid at the time of autopsy and nothing suggested at that time that it had ever been cystic. I am not quite clear from the surgical report whether it was cystic at the time of operation. The center was soft, but no fluid or air was reported.

Dr. Holmes: Were there any signs of x-ray treatment?

Dr. Mallory: The tumor was almost totally necrotic. We could hardly find a viable cell in the mediastinal tumor in contrast to the liver, where the histology was essentially that of the biopsy specimen.

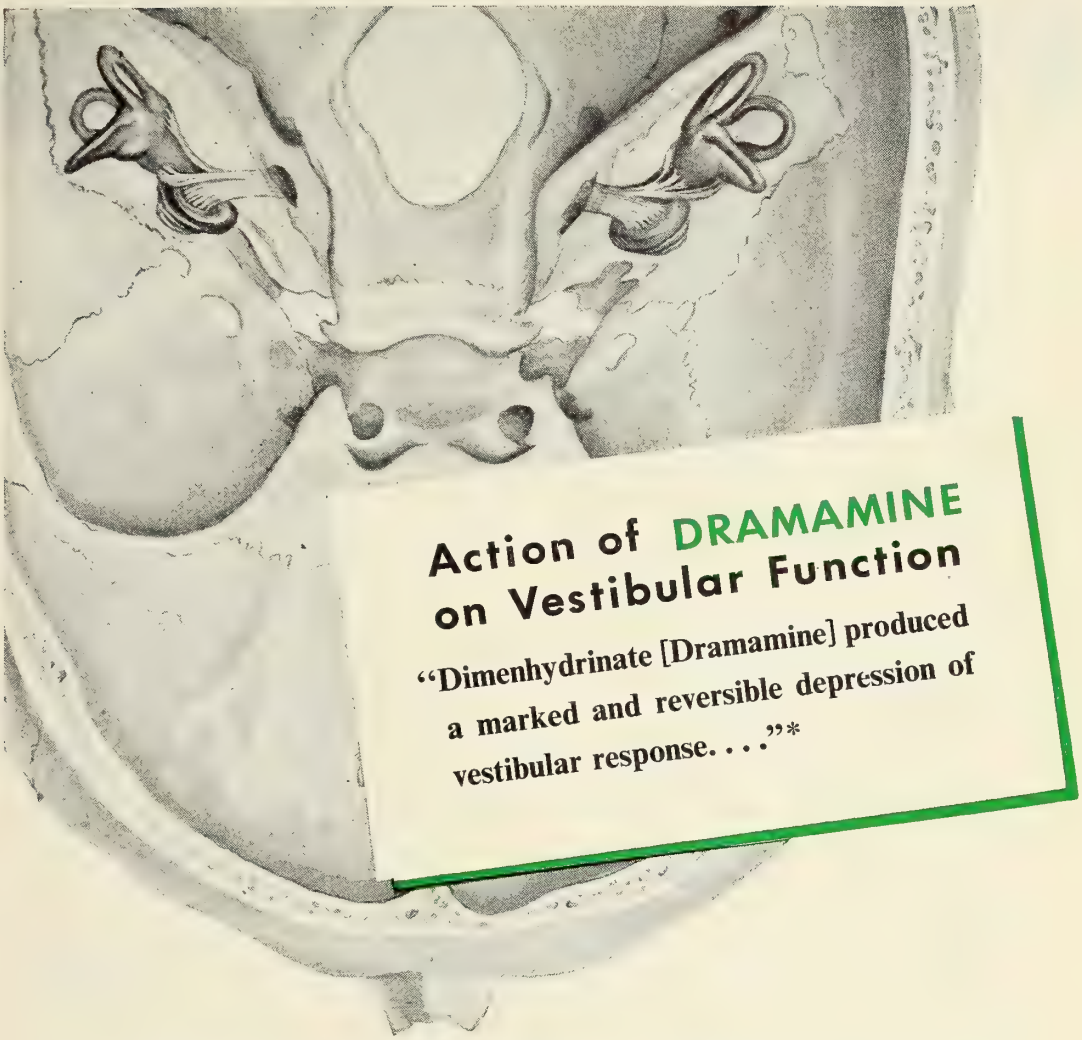
Dr. Holmes: I suppose that the change in the fifth lumbar vertebra does represent a metastasis. However, it is wedge shaped, the reverse of what it should be with a pathologic fracture.

## ANNOUNCEMENT OF MEETINGS AT UNIVERSITY OF TEXAS

Several meetings of interest to scientists and physicians will be held at the Texas Medical Center, Houston, Texas, on April 25 and 26.

These will include the *Sixth Annual Symposium on Fundamental Cancer Research* of The University of Texas M. D. Anderson Hospital for Cancer Research. One half-day will be devoted to selected papers on the subject of nutritional factors in cancer. *The Cancer Pathology and Radiology Conference* of The University of Texas M. D. Anderson Hospital and Postgraduate School of Medicine will be on *Tumors and Other Diseases of Bone.* A meeting of the *South Central Section* of the *College of American Pathologists* will co-participate in the Symposium and Pathology Conference. There will be papers of general interest to pathologists. Dr. M. M. Wintrobe, Professor of Medicine at the University of Utah is arranging the session on nutritional factors in cancer. Dr. Granville Bennett, Professor of Pathology of the University of Illinois, and Dr. L. Henry Garland, Professor of Radiology at Stanford University Medical School, will jointly conduct the conference on *Tumors and Other Diseases of Bone.*

The third Bertner Foundation Lecture and Award will be made at the banquet on April 25. All meetings will be held at The Shamrock. Further information may be obtained from William O. Russell, M.D., at 2310 Baldwin Street, Houston 6, Texas.




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*Gutner, L. B.; Gould, W. J., and Batterman, R. D.: Action of Dimenhydrinate (Dramamine) and Other Drugs on Vestibular Function, Arch. Otolaryng. *53*:308 (March) 1951.

RESEARCH IN THE SERVICE OF MEDICINE **SEARLE**

# THE *Secretary's* MESSAGE

## ANNUAL MEETIN' TIME

IT IS NOT TOO EARLY TO MARK YOUR CALENDAR FOR THE BIG EVENT – *THE SIXTY-FIRST ANNUAL MEETING OF YOUR ASSOCIATION*. THE TIME–*APRIL* 30 THROUGH *MAY* 3, 1952, TO BE EXACT. THE PLACE – *PHOENIX*, WITH HEADQUARTERS AT *HOTEL WESTWARD HO*.

AN OUTSTANDING *SCIENTIFIC SESSIONS* PROGRAM HAS BEEN ARRANGED TO INCLUDE OUT-OF-STATE GREAT ORATORS: OSBORNE A. BRINES, M.D., PROFESSOR OF PATHOLOGY, WAYNE UNIVERSITY, DETROIT; HAROLD E. CROWE, M.D., ASSISTANT PROFESSOR OF ORTHOPEDICS, COLLEGE OF MEDICAL EVANGELISTS, LOS ANGELES; L. MAXWELL LOCKIE, M.D., PROFESSOR OF THERAPEUTICS, BUFFALO UNIVERSITY, BUFFALO; IAN G. MACDONALD, M.D., ASSOCIATE CLINICAL PROFESSOR OF SURGERY, SOUTHERN CALIFORNIA UNIVERSITY, LOS ANGELES; HALE F. SHIRLEY, M.D., ASSOCIATE PROFESSOR OF PEDIATRICS AND PSYCHIATRY, STANFORD UNIVERSITY, SAN FRANCISCO; SCOTT M. SMITH, M.D., ASSOCIATE PROFESSOR OF ANESTHESIOLOGY, UTAH UNIVERSITY, SALT LAKE CITY; AND WILLIAM P. THOMPSON, M.D., CLINICAL PROFESSOR OF MEDICINE, COLLEGE OF MEDICAL EVANGELISTS, LOS ANGELES.

ALL PHYSICIANS MEMBERS WHO HAVE VOLUNTEERED TO PRESENT SCIENTIFIC PAPERS WILL LIKEWISE BE AN IMPORTANT PART OF THE SCIENTIFIC SESSIONS AND WILL INCLUDE: DRS. MARCY L. SUSSMAN; BENSON BLOOM; JOHN R. GREEN WITH RICHARD E. H. DUISBERG AND WILLIAM B. McGRATH PARTICIPATING; W. WARNER WATKINS; JULES L. WHITEHILL; FRIEDEL B. SCHUTZBANK; JAMES T. EMERT; C. THOMAS READ; LOUIS G. JEKEL; MONROE H. GREEN; E. PAYNE PALMER; WILLIAM G. SHULTZ; CLARA S. WEBSTER; LUDWIG A. LINDBERG; DOUGLAS D. GAIN; ROBERT A. PRICE; AND CHARLES L. VON POHLE.

THE *PRESIDENT'S DINNER-DANCE* WILL BE HELD FRIDAY EVENING, MAY 2ND, IN THE FIESTA ROOM, HOTEL WESTWARD HO, AT 8:00 P.M., PRECEDED BY A SOCIAL HOUR AT THE HOME OF DR. AND MRS. FRANK J. MILLOY, 18 N. COUNTRY CLUB DRIVE, SCHEDULED FOR 6:30 P.M.

A FULL DAY FOR OUR *GOLFERS* IS SCHEDULED FOR SATURDAY, MAY 3RD, AT PHOENIX COUNTRY CLUB, FOLLOWED BY A SOCIAL HOUR.

COUNCIL WILL HAVE A DINNER-MEETING TUESDAY, APRIL 29TH, FOLLOWED BY THE ANNUAL CORPORATION MEETING OF BLUE SHIELD. THE HOUSE OF DELEGATES IS SCHEDULED TO MEET WEDNESDAY AND FRIDAY MORNINGS, APRIL 30TH AND MAY 2ND. THE GENERAL SESSION WILL BE CONDUCTED WEDNESDAY MORNING, APRIL 30TH.

MORE DETAILS WILL SOON FOLLOW, SO REMEMBER – *ANNUAL MEETING* – PHOENIX – APRIL 30 THROUGH MAY 3, 1952 – AND PLAN NOW TO PARTICIPATE.

# Editorial

ARIZONA MEDICINE

*Journal of*

ARIZONA MEDICAL ASSOCIATION, INC.

VOL. 9 MARCH, 1952 NO. 3

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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.
2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. (See MEDICAL WRITING by Morris Fishbein.)
3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.
4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.
5. Submit manuscript typewritten and double-spaced.
6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.

The Editor is always ready, willing, and happy to help in any way possible.

## The Treatment Of Tuberculosis

SECTION II

(This summary of modern therapy was started in an editorial last month, will be concluded now with comments on Collapse Therapy, Resection, Rehabilitation, and After-Care. Non-pulmonary lesions have not been considered).

A. REVERSIBLE COLLAPSE THERAPY.– It should be mentioned again that the indications for all collapse or excision methods are thoroughly scrambled, due in part to new procedures and in even greater part to chemotherapy.

The *permanance* of collapse therapy is a most important quality, and some of the 'reversible' methods do not always deserve the name.

*Extrapleural pneumonolysis*, for instance, was once routinely followed by pneumothorax, and was called reversible. Most lesions require a more permanent collapse, however, and extrapleural should usually be aimed at such an effect, of made permanent by replacement with another operation.

*Phrenic nerve* operations should consist of careful crushes unless function is never again wanted—a rare situation. The crushes are still not certain to paralyze the diaphragm, nor is the paralysis certain to clear in all cases. The permanence of phrenic operations can not be depended upon. Temporary phrenics are currently used in two situation,—as an adjunct to a pneumoperitoneum, usually when the status of the PNP has been noted and found wanting; as a fill-in for a lobectomy, usually of a lower lobe. A few other indications may occur, but they are not frequent.

*Intrapleural pneumothorax* has waned in popularity in most areas so that new inductions may be quite rare. The cause is partly the success of chemotherapy, the value of pneumoperitoneum, and the use of resection or permanent collapse without an interlude of pneumothorax. It is also largely due to the realization that pneumothorax is not uncomplicated and often not reversible. Pleural thickening, poor expansion, and 'bound' lungs occur too often to be overlooked unless there is no alternative. Fortunately effusions, empyemas, and atelectasis from acute tuberculous bronchitis are all minimized by chemotherapy, so that a collapse is safer than it was five years ago. When pneumothorax is used, complications may be further decreased by terminating the collapse as soon as certain signs appear. The patient is often the chief obstacle to such a short course.

*Pneumoperitoneum* is still a controversial method, but its use increases almost everywhere. Its chief advantage is reversibility; it can be

used as an adjunct to the drugs and bedrest until the often bilateral lesions are healed, or until they have localized to the point where a locally applied method is feasible. PNP can then be discontinued, in a short time and with small chance of complications. The disadvantages include a remoteness from the apices, and the inertia which a partly effective method seems to produce in patient and physician. The value of PNP is hard to estimate, but it is surely considerable in many cases.

B. PERMANENT COLLAPSE THERAPY.—The correct use of a permanent method is also uncertain. It chiefly depends upon the surgeon, and it may consist (when resection is not chosen) of a decision between the 'conservative' thoracoplasty and other, less tried-and-true operations. Many thoughtful surgeons prefer thoracoplasty, in spite of its deformity and loss of chest-wall support. They have additionally used such gimmicks as (a) the 'squared-off' thoracoplasty; (b) 'delayed costectomy' (after separation of the periosteum and fascial bundles from the ribs); and (c) a 'waterfall' thoracoplasty (done after an upper lobectomy by removing only 2 cm. sections from the posterior and lateral parts of the upper 4 or 5 ribs.) These modifications improve the collapse (a); reduce the paradox (b), and simplify the operation (c).

*Extrapleural pneumonolysis* can be made into a permanent collapse by the use of certain new materials in place of air or oil. Wax is safe for small apical pockets; lucite spheres may be used for larger spaces; and sponge materials have recently been tried. The hazards and effectiveness of lucite and sponge are not yet well-known, but the advantages of extrapleural collapse (intact chest wall, greater directed collapse, and the least loss of lung function of any operation) suggest that some suitable medium will be found.

Other relatively untried operations include thoracoplasty with insection of an extra-fascial strut, the placement of lucite spheres between denuded ribs and the depressed fascial bundles (permanently or until the collapse is 'fixed'), etc. Research surgeons have from 50 to 150 of these cases, and sufficient data should soon be forthcoming. The Monaldi and cavernostomy procedures are rarely indicated or done.

C. PULMONARY RESECTION.—Resection is now The Mode. Theoretically it is the best operation of all, since a removal of the necrotic lung tissue is the best for the body. Practically, like all major chest surgery, the operation has become quite safe; anaesthesia, replaced blood, better technique, antibiotics, and improved general care are now combined to lower the morbidity and mortality nearly to zero.

Some clinics are using resection for almost every type of lesion. The indications are increasing in number even by conservative standards. Destroyed lungs, bronchial stenosis, basal cavities, collapsed but unhealed lesions, et al., are joined by chronic fibro-cavitative lesions which would collapse poorly, 'round focus' lesions which continue to spill a few bacilli, any large cavity, etc. These indications are sounder when the lesion is restricted to a lobe, but a Saranac V.A. group is now using chemotherapy from 6 to 18 months and then removing all residual nodules above a certain size by segmental resection. (This last routine is not yet a confirmed practice).

The exact place of resection in the future depends on summaries now being made. Past experience suggests that results will be variable in different hands, but a general agreement should be reached—until further hoped-for miracles change the balance again.

D. REHABILITATION.—A few comments should be made on care-after-treatment. It is a time for reinforcing the results of therapy, preventing recurrence, and an everlasting survey of progress "in a disease which tends to heal incompletely and to relapse."

1. Continue treatment and a close laboratory observation after the few months of what may be a 'drug remission'. The gastric cultures may return to positive, a signal of incompletely healed disease.

2. Use exercise as a medicine, to be given in measured doses, and with regular increases depending on time, x-ray films, and bacterial studies.

3. Continue restrictions on exercise, and insistence on extra rest, indefinitely in most cases. Occupations and entertainment can almost always be changed to fit the needs.

4. Check on the symptoms, signs, x-ray findings, and bacterial studies at regular intervals. This check-up may vary from 2 months in recent 'cures' or suspected activity to 6 months in stable lesions (and individuals). Small films may be used in late follow-ups. Gastric aspirations

should be used when sputum is negative. Cultures are about equal to a guinea-pig in efficiency.

The disease is the patient's, and he must understand it and arrange for its care, but the responsibility is generally considered to be shared by the physician. *The treatment should be continued forever.*

# TOPICS OF *Current Medical* INTEREST

## RX, DX, AND DOCTORS

By GUILLERMO OSLER, M. D.

The V. A. continues to put on their excellent Conferences on CHEMOTHERAPY OF TUBERCULOSIS. The Eleventh was held in January in St. Louis, with more than 100 V.A. and civilian consultants present. . . . We can jump the gun on official reports by noting several of the high points,—1. Streptomycin and dihydrostreptomycin are about equal in both good and bad effects. 2. One gram of SM twice a week, and 12 grams of PAS daily is the best regimen. 3. The use of the combined routine is producing some good results even in cases resistant to SM. 4. The extrapulmonary complications of tb. are decreasing, due to chemotherapy of lung disease. 5. Cavities can be sterilized by long continued therapy, in spite of the persistence of acid fast bacilli. 6. DHSM does not produce the feared ototoxicity with the doses suggested. 7. Benamid may be of future value in sustaining the blood level of SM. 8. Mycomycin has been abandoned. Viomycin has not measured up. Terramycin has little effect in tb. (9. The Women's Home Companion has scooped other journals by an article on segmental resection!).

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**The second favorable piece of news concerning the effect of CHEMOTHERAPY IN PRIMARY TUBERCULOSIS comes from the same place as the first. The N.Y.U.-Bellevue Medical Center confirms its first reports. . . . Chemotherapy has entirely changed the immediate prognosis. The case fatality rate has dropped from 18% before streptomycin to 3% after it. . . . Recovery from tuberculous meningitis, treated by them with SM, occurs in 2 out of 3 cases.**

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The communicable disease summary by the Arizona State Dep't. of Health shows some interesting figures for TUBERCULOSIS. There were 3708 cases reported in 1951, versus 2683 cases in 1950. . . . An increase of a thousand cases can only mean better case-finding or better case-reporting. In either case, here's a cheer for a triumph by the Dep't. and the state M.D.s. After years of heckling, this Osler refuses to look too closely.

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**The value of ROUTINE CASE-FINDING X-RAYS IN HOSPITALS is emphasized by Dr. Edward Kupka, tuberculosis control director in California. . . . Dr. Kupka reports (by personal communication) that one-tenth of the new cases being reported in California come from the huge routine survey of admissions to the Los Angeles County Hospital.**

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Look who's practicing medicine on DOCTORS! Trans World Airlines (TWA) tells physicians thruout the United States (and even California) that a Quickie Vacation in the clear dry desert air is just the things to get one away from the office, and good medicine too. . . . They at least have literary (if not medical) license.

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**ANTIBIOTICS**

**Dr. Frank Meleney (a onetime Arizona Medicine contributor) reports that the nephrotoxic elements of BACITRACIN are so greatly reduced that it may be safely used systemically.**

**TERRAMYCIN was reported to be effective on pinworms (enterobiasis) in animals. It has now been found 100% successful in 30 cases in humans. Scotch tape impressions were negative for ova by the second post-treatment day, and no evidence of relapse occurred in the five week observation period.**

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Arizona is bracketted by TYPHUS, tho it is endemic; New Mexico had it, and now it is reported in California. . . . The latter occurrence was not in cosmopolitan, brash, waterfront Los Angeles, but in gentle Altadena in the north part of Pasadena. . . . Rats moved out of a demolished barn into nearby houses, and their fleas moved from the rats to pets and humans. Then the health department moved into Altadena.

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**So this nurse says to me, "You know what they're using for VIRUS FLU now?" "No, what?" says I. "Penicillin and streptomycin", she says proudly, "my mother gets hypodermics every day". I count to a hundred, then go ahead anyway,— "Lady, 'they' are always using something. Antihistamines, penicillin, and so on, and so forth. Preferably by hypo. Did you hear, yet, that 'colds', 'flu', or 'grippe', or 'virus infection' had a cure? Did you hear. . . .?" Well where did that lady go?!**

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Do you casually wonder how much actual progress has been made in MALARIA THERAPY?

Casual, unless you see one of the occasional cases flown back to Arizona from the area south of Mexico City. . . . The chief advance during the war was a recognition of Atabrine (also called quinacrine and mepacrine). Atabrine is less toxic than quinine; when properly given it works faster; it is a practical cure for the most common and fatal type (falciparum). . . . It suppresses but does not cure the vivax type, thus allowing late relapses. . . . An organized examination of 14,000 compounds was not helpful during the war, but was a classic search, and produced at least two drugs of value. It also produced a huge volume of knowledge about malaria and pharmacology in general. . . . Chloroquine (called Aralen or SN 7618) is better than Atabrine as a suppressive and for ending acute attacks of vivax. Pentaquine (or SN 13,276) can be used alone or with quinine for a 'radical cure' of vivax. . . . The British found 'paludrine', a great early starter, but productive of resistant strains. . . . Recent news reports have told of the notable values of primaquine, but we must wait for the published studies and a greater usage. . . . We are apparently nearer the 'magic bullet' for malaria.

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**The place of vitamin B 12 in the ETIOLOGY AND THERAPY OF ANEMIAS is more clearly being described. Dr. W. B. Castle, student of the late Dr. George Minot, and originator of the first schema, now calls gastric secretion the 'intrinsic factor' and vitamin B 12 (or closely related compounds) the 'extrinsic factor' in pernicious anemia. . . . In general, normal hematopoiesis requires vitamin B 12, folic acid, and ascorbic acid. Some form of anemia may follow the lack of any of the three substances.**

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BRAIN WAVES may some day be of help in vocational guidance. It has been shown that there are personality differences which coincide with electroencelphalogram findings. . . . Drs. Travis and Bennett of U.S.C. showed that persons who have a predominance of alpha waves are 'quick deciders'. Those with beta waves are sensitive to details, and are worriers. . . . The personality tests were made with Rorschach ink-blots.

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**A neat and precise article on 'APPLIED PSYCHOSOMATIC MEDICINE IN GENERAL PRACTICE' appears in the August issue of ANNALS OF WESTERN MEDICINE and SURGERY. The author is Dr. Robert Crede of the division of medicine, U. of Cal. . . . It is well-subdivided, and proceeds on the basis that valuable information about the patient's background and personality structure can be obtained by a special simple approach. He then tells how to obtain it. . . . How does the patient tell his story? How does he react to it? What unusual points are there in his development, his family, his childhood, his sex-life, his symptoms? What attitude should the physician take? When should he take action, observe, be patient? How? . . . Not a bad outline—and he actually thinks that the average physician can use it.**

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Five members of the medical and pediatric sections of the Mayo Clinic have used CORTISONE ON A CASE OF TETANUS. . . . The object was not to change the course of the toxic infection, but to help the patient survive while healing the disease, and to attenuate hypersensitivity of various sorts. . . . One case has been reported with abruptly good results. Sedatives, antibiotics, wound cleansing, and antitoxin were administered as usual for a situation which included trismus and tetanospasms. An unfavorable progress was arrested and reversed after tracheotomy and exhibition of cortisone. It was felt that the drug was the cause of the improvement. . . . It should be worth further trial.

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**Wannamaker, Rammelkamp, et al., have added to their earlier series on PROPHYLAXIS OF RHEUMATIC FEVER in an article in the American Medical Journal. . . . They have 1,178 patients with exudative tonsillitis or pharyngitis which were treated by penicillin, and 1,162 non-treated controls. Penicillin (G, procaine, in oil) was used in 3 dosage schedules, and early use of 1.2 million units in 3 doses was the most effective. . . . In the control series, 28 definite and 7 possible cases of rheumatic fever occurred; in the treated series, 2 definite and 3 possible cases were found.**

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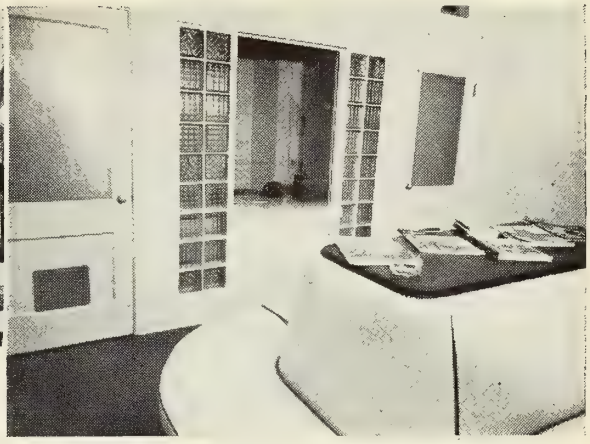
A few snake-pit movies and a few articles in national magazine have started the state institutions on another necessary surge to improve CARE OF THE MENTALLY ILL. . . . 'Hospital Management' has a list of quotations from the Governors of two dozen states, telling what their states are doing or intend to do. Governor Pyle briefly says that "Arizona hopes soon to be in the forefront of the states whose mental hospitals have been brought up to the highest possible standards of therapeutic and custodial care" . . . Public prodding is a great need when the situation is so huge and inert and obscure. (Anyone who mentions Winnie Ruth is out of bounds. Judge not, lest ye also be Juddged).

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**If one should speak of W.R.J., one could mention the tuberculosis sanatorium (La Vina) in Altadena, California, where she was a patient about 30 years ago. . . . Everyone at La Vina tingles slightly on the occasions when Winnie 'attains her freedom'. She returned there once, just after the unfortunate dismemberments, hid out in an old cottage on the hillside, lived on purloined milk, and slipped away before being discovered. . . . The patients and staff at La Vina follow all bulletins from Phoenix—and cheer for a thirty-year 'cure' of tuberculosis.**



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## THE HONOR ROLL OF TECHNICAL EXHIBITORS

At Annual Meetings of Arizona Medical Association

A recent survey just completed reveals those Technical Exhibitors who consistently or for a large portion of the years checked (1939 to and including 1951, excluding the years 1945 and 1949, when no Technical Exhibits were held) supported our Annual Meetings over this 13-year period. Their names appear on the following Honor Roll of firms who have been loyal to The Arizona Medical Association:

Ayerst, McKenna & Harrison, Limited, New York, New York—8 times and every year since 1946.

Don Baxter, Inc., Glendale, California—9 times and every year since 1946.

Ciba Pharmaceutical Products, Inc., Summit, New Jersey—10 times.

The Coca-Cola Company, Atlanta, Georgia—Every year since 1948.

Doho Chemical Corporation, New York, New York—4 out of the last 5 years.

General Electric Company, Los Angeles, California—11 times.

Lanteen Medical Laboratories, Evanston, Illinois—4 out of the last 5 years.

Eli Lilly and Company, Indianapolis, Indiana—6 times and every year since 1948.

M & R Laboratories, Columbus, Ohio—8 times and every year since 1947.

Mead Johnson & Company, Evansville, Indiana—12 *times and every years since* 1939.

Parke, Davis & Company, Detroit, Michigan—Every year since 1948.

Pet Milk Company, San Francisco, California—10 times.

A. H. Robins Co., Inc., Richmond, Virginia—4 out of the last 5 years.

Sandoz Pharmaceuticals, San Francisco, California—8 times and every year since 1948.

G. D. Searle & Co., Chicago, Illinois—Every year since 1948.

Smith-Dorsey, Lincoln, Nebraska—Every year since 1948.

Southwestern Surgical Supply Co., Phoenix, Arizona—12 *times and every year since* 1939.

Standard Surgical Supply Co., Inc., Phoenix, Arizona—Every year since 1946.

Westinghouse Electric Corporation, San Francisco, California—7 times and every year since 1948.

Winthrop-Stearns Inc., New York, New York—Every year since 1948.

These firms will again be with us in 1952 during the Annual Meeting of this Association to be held in Phoenix, Arizona, with headquarters at Hotel Westward Ho. In addition, the following companies, some of whom have been with us several years on an alternating schedule, and others for the first time, will likewise participate in 1952:

The Borden Company (Maricopa Division, Phoenix, Arizona.

Marlyn Company, Inc., Los Angeles, California.

McNeil Laboratories, Inc., Hollywood, California.

The Wm. S. Merrell Company, Cincinnati, Ohio.

Medco Products Company, Tulsa, Oklahoma.

E. S. Miller Laboratories, Inc., Los Angeles, California.

The National Drug Company, Philadelphia, Pennsylvania.

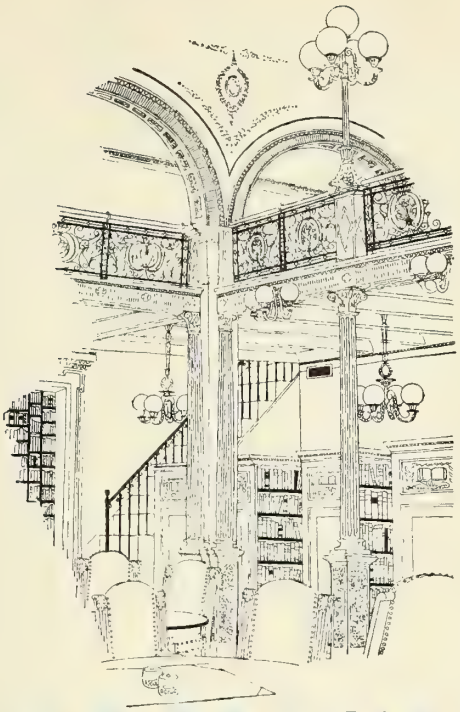
Chas. Pfizer & Co., Inc., Brooklyn, New York.

Philip Morris & Co. Ltd., Inc., New York, New York.

Western Surgical Supply Co., Ltd., Los Angeles, California.

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## Poliomyelitis Management Technique

The following recommendations for care of Poliomyelitis were read at the November 5th County Society meeting by Carlos Craig. It was of such general interest that we were requested to print it and make it available to all Society members.

ALL POLIO ADMISSIONS—

1. Mattress board—foot board.
2. Routine C.B.C. and Urinalysis.
3. Spinal tap on admission unless onset has been less than 24 hours previous.

IF DIAGNOSIS IS POSITIVE—

1. Regular Hi-Protein Diet for age; Except, no milk, milk shakes, malts, eggnogs, ice cream or cream soups.
2. Additional fruit juices three times daily.
3. Vitamins.
4. NaCL t.i.d. when hot packs are started.
5. A.S.A. or A.P.C. every four hours P.R.N. for discomfort.
6. Enema P.R.N.
7. Catherize every 8 hours P.R.N.
8. Intake and output.
9. Daily fluid intake to be kept up to following:
   a. 1-5 years 1500 c.c.
   b. 5-10 years 2000 c.c.
   c. 10-15 years 2500 c.c.
   d. 15 years 3000 c.c.

   (NaCL per day should not exceed 5 gms.)
10. No packs until patient is relatively afebrile (101 oral—102R).
    Back—neck and both lower extremities to be packed on all acute cases.
    Other areas as ordered. Chest on all bulbars and high cervicals.
    Packs to be given 1 hour on—1 hour off—9 a.m.—8 p.m. with additional packs for severe spasm.
11. Orthopedic consultation at end of 7 days or earlier if patient is afebrile.
12. Patients are to be kept flat until otherwise ordered by the Orthopedic Consultant.
13. Physiotherapy on order of orthopedic consultant.

*Atropine, opium, or barbiturates, or any of their derivatives may not be given to patients demonstrating the following symptoms:—

1. Chest pain. 2. Difficulty in swallowing.
3. Excessive amount of mucous in nose and throat.
4. Voice and speech changes.
5. Cyanosis. 6. Facial twitchings.
7. Flaring nostrils. 8. Visual disturbances.
9. Spasms of intercostals or diaphragm.
10. Any use of accessory muscles to assist breathing.
11. Diaphoresis.

Aspirin, A.P.C., and Chloral Hydrate *only* may be given. Smoking and flowers are not permitted.

II. *Polios with cervical involvement: i.e. patients demonstrating chest pain—cyanosis—flaring nostrils—spasm of intercostals or diaphragm.*

1. Chest packs.
2. Nasal oxygen—2 to 4 per minute continuously.
3. Ventilation readings every hour if patient will co-operation. Place in respirator if readings approach minimum Vital Capacity.

III. *Polios with bulbar involvement i.e.—Patients demonstrating difficulty in swallowing—mucous—voice and speech changes—*

1. Prone Trendelenberg.
2. Suction P.R.N.
3. Clear liquids only if tolerated.
4. Tracheotomy when indicated.
5. Respirator following tracheotomy if patient is not ventilating.

IV. *Polios with encephalitis.*

1. Nasal oxygen.
2. 10% dextrose in water I.V. if indicated.

TRACHEOTOMY CARE:—

1. Nothing by mouth 4-7 days.
2. Clear liquids or if patient is tube fed:—
   a. First 24 hours water ounces one to two every hour.
   b. Second 24 hours, use five per cent glucose in water.
   c. Formula thereafter.

RESPIRATOR CARE:—

1. Pressure:—Normal tidal exchange (determined by use of ventilation meter).
2. Negative pressure only to be used on tank.
3. Negative pressure not to exceed 20 cms. If normal ventilation cannot be achieved in this manner, tracheotomy is performed so that Bennett positive pressure can be used.
4. C.B.C.—Urinalysis—Carbon Dioxide combining power — N.P.N., Total Proteins, Chlorides, A/G Ratio from 2 times weekly to 1 time per months as patient improves.
5. Change Ph (Urine) every 2 weeks.
6. Retention catheter after patient has been unable to void for 24-48 hours—to remain in until patient is afebrile.

## CAVEAT EMPTOR*

Treatment by a practitioner of one school of medicine cannot be adjudged malpractice by the standards of any other school of medicine. The decisions in two cases recently reviewed by the Michigan Supreme Court emphasizes this point, and, in effect, put the public on notice to be wary, since *there is more than one standard of medical practice.*

Standards for the practice of the healing arts have been established and improved by doctors of medicine for many years and have been widely publicized and accepted. The entry of other systems of practice with their claims to equality and even superiority and their not too clearly defined methods of practice is responsible for the confusion now disclosed by the Court.

Patients who select *any* healer, assuming that all have the same standards, belately discover, when they find themselves aggrieved, that what they thought was the real article was something of foreign quality based on a different set of standards.

Illustrative of this rude awakening are the two cases referred to above: one, in which the widow of a patient subjected to thyroidectomy by an osteopath claimed malpractice and was denied damages because she wrongly assumed that the standards of the allopathic school applied. The other, involving an injury to a hand in which it was claimed the defendant osteopath failed to suture cut tendons, with resultant disability, was also denied redress for the same reason.

Among the several reasons leading to the decisions is one which puts the blame squarely on the shoulders of the patient, to wit: "a patient who seeks treatment from an osteopath for the cure or allevation of his condition is charged with knowledge of the fact that the osteopath would follow the methods and practice observed in the osteopathic system of treatment, and is not in a position to complain that the methods and standards of practice customarily observed by another school of medicine were not followed.

With no uniform set of standards for the various systems of practice now legalized by the State, it is incumbent on the patient to inform himself as to the differences that exist, since he alone is responsible for his choice. And the Court has in effect wisely cautioned: let the buyer beware.

*Reprinted from Detroit Medical News.

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# Woman's AUXILIARY




**"HEALTHY LIVING IN PIMA COUNTY"**
**"TRAFFIC SAFETY" broadcast, at Station KTKT. "Smokey" Altenberger, guest expert, with Chuck Blower, MC, and Students. (Photo by Sam Levitz).**

## RADIO HEALTH EDUCATION PROGRAM IN PIMA COUNTY

The proposed Radio Health Education program was fully described in the July issue of *Arizona Medicine*. At that time, it had been accepted as the 1951-1952 project for Public Relations and Health. Pima County Auxiliary, under the direction of Mrs. J. K. Bennett and Mrs. Blair Saylor, has now passed the half-way mark in its radio schedule; we would like to present, here, a few statistics from their complete report, that should be of interest to all Auxiliary members.

During the past fifteen weeks, 120 school children have appeared on the program, representing each Public Elementary School in Tucson, including Davis-Monthan Air Base. Each week, the four scheduled schools have been contacted, reminded of the date, and arrangements for transportation of the participating students have been made. It has been necessary for the Auxiliary to furnish transportation for about sixty of these pupils so far.

The expense of providing Teacher's Manuals was met by the State Auxiliary. These had to be revised, printed and distributed to every 4th, 5th, and 6th grade teacher in the Tucson Public School System, before the beginning of the fall schedule.

When available, sound movies have augmented the teaching material. Nine films have been shown to thirty-six schools, encompassing 4,500 pupils in the participating grades. In many cases the entire school viewed the film. The Department of Radio-Visual Aid of the University of Arizona gave invaluable assistance in the selection of suitable films. Auxiliary members viewed countless films before the final selection of the few that were appropriate to our program. These were then procured from the least expensive source, and in many cases they were donated. It was an overwhelming job for Auxiliary members to secure these films at the proper time, schedule their use by the participating schools, and transport them to and from the schools. This phase of the program alone has disseminated a great deal of health information. The book of radio scripts, provided by the University of Texas, had to be adapted for our use. Some of the topics were

not pertinent to Arizona, so new scripts were written; for example, "Poisonous Creatures of Arizona" was substituted for "Rat Control." Two of the Texas programs were combined, and a special one on the newly organized Visiting Nurse Association was inserted.

Perhaps it is fortunate that the work of this revision was underestimated, for it is probable that we would have thought it impossible to get the scripts and school material ready for use by October 11th, when the first broadcast was scheduled. The Texas format was on a competitive basis. This idea was not acceptable to the School Authorities, so it had to be changed to a regular question-and-answer session. Moreover, there were changes, not only because of different conditions and Public Health Regulations in Texas, but those scripts were written almost exclusively for a rural audience, whereas most of ours is metropolitan. They had an announcer, as well as a Master of Ceremonies, whereas we had only an announcer whose time was donated by Station KTKT, and who had no knowledge or concern with the program other than that of reading his prepared lines at the time of the broadcast—these, incidentally, were "live" instead of previously recorded ones as was the policy in Texas. All of these factors, and many others, had to be taken into consideration but now, of course, our revised scripts are available for any other Auxiliary undertaking the program, so that future changes should be comparatively few and simple.

The Auxiliary was very fortunate in having alert and interested guest experts who carefully screened every script for authenticity. These experts were obtained by the Council of Social Agencies from the Police Department, Fire Department, Public Health Department, St. Mary's Hospital, Y.M.C.A., School Nurses, Red Cross, University of Arizona, and others. Contacts with all these representative organizations have meant good Public Relations. Many of them did not realize that a Medical Auxiliary exists. In addition to this responsibility, the Council of Social Agencies accepted that of mimeographing, where many copies of radio script material or supplementary teaching material were required.

Station KTKT has given us fifteen minutes of free radio time every week, plus tape recordings of three programs which were scheduled during school vacation periods. Cooperation from a radio station is obviously the most vital requirement for the success of the program, and we are especially grateful to Station KTKT for their contribution.

One of the most important features of the project was the distribution of 12,000 printed schedules of the radio program which listed topics, time, and dates of the broadcasts. These bulletins went to every Elementary School child in Tucson. If Junior took his copy home, as he was supposed to do, it was read by 12,000 mothers and, we hope, not a few fathers, which adds up to a lot of people who become aware of the Women's Auxiliary to the Medical Association.

The importance of good publicity cannot be over-stressed. This was very competently handled in Pima County by Mrs. Hiram Cochran. Advertisements of the program appeared in the radio section of the newspapers when the broadcasts first got underway, and news items and pictures were inserted whenever possible.

Pima County faced difficulties which no other Auxiliary in Arizona, wanting to institute the program in its county, would have to meet. Due to lack of time for complete revision of all material before the fall opening of the school year, much of the work has had to be done hurriedly. This preparation should be, and would have been done many months in advance, had the program been approved in time. As a result, Pima County Auxiliary members have learned how to write radio scripts, set up a studio, do a pre-broadcast warm-up with inexperienced, first-time-on-the-radio actors, supply sound effects, and give soundless signals of suggestion or correction to an M.C. unfamiliar with medical terminology. However, these very factors have resulted in a relaxed, spontaneous effect which has enhanced rather than detracted from the "listenability" of the program.

We hope that we have not stressed the difficulties, the work, and the disappointments too much; more than matching them are the satisfaction of knowing that a needed program of health education is started, that many people in the Tucson area listen and approve (judging from comments and correspondence about it), and the Auxiliary has a definite, vital project that *can* grow from a small beginning locally into a forceful means of promoting good Public Relations throughout the state.

This report is confined, as stated, to the activities of Pima County, but it is gratifying to learn, recently, that four out of the five organized counties in Arizona have started, or are planning to start, the radio health education program. Their progress and methods will be covered in our report on the work of all the Public Relations and Health Committees at the end of the year.

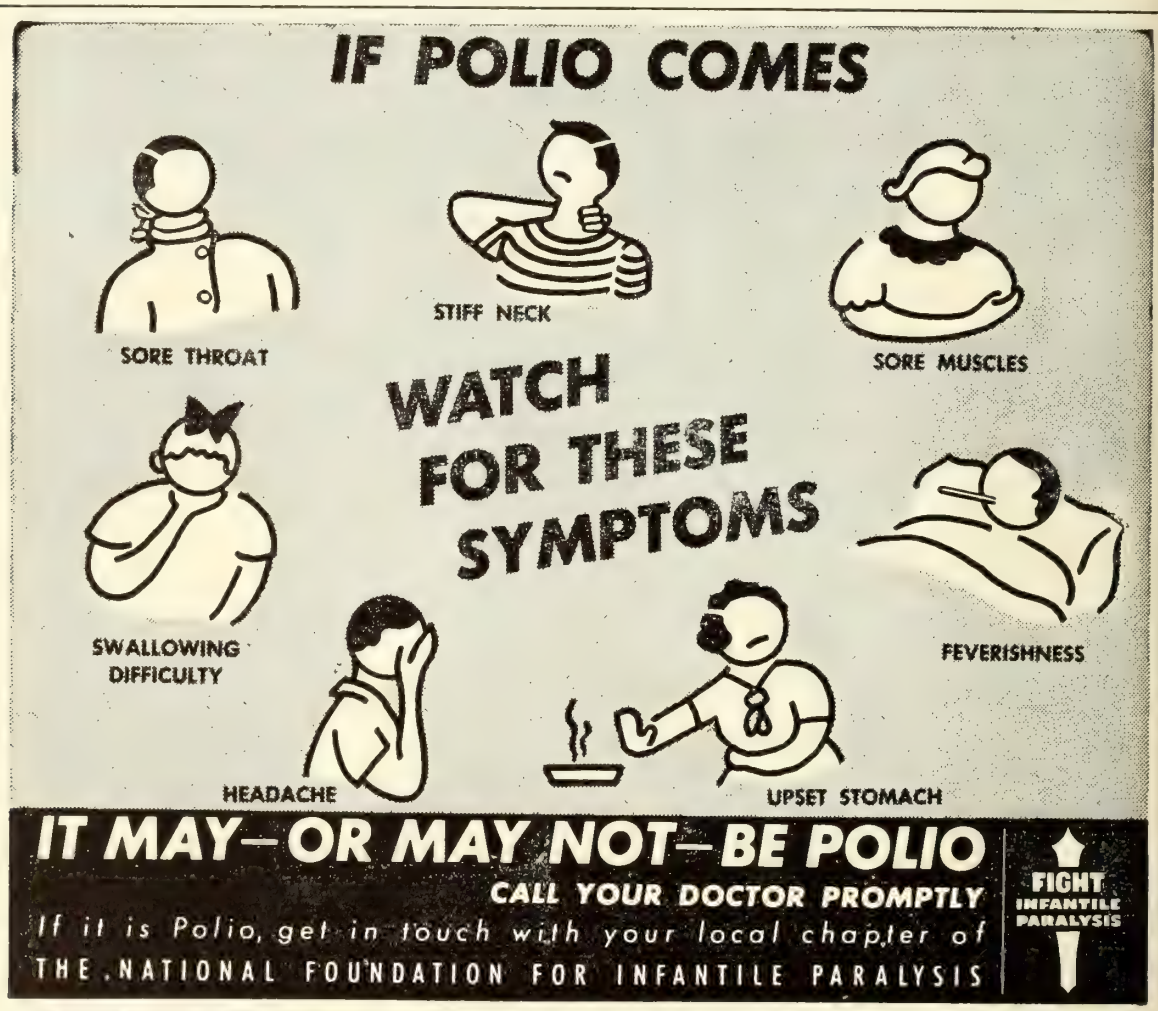
Betty P. Kinkade, Public Relations Chairman,
Anne T. Baker, Health Chairman

## COMMISSIONED RESERVE MEDICAL OFFICERS

At the request of the local state headquarters of the Selective Service System, those physicians receiving Commissions in the Reserves of the military forces are urged to immediately, following notification and acceptance of such Commissions, so advise their respective local Selective Service Boards of this fact; otherwise, these boards have no knowledge thereof and would normally proceed to call physicians for induction on the basis of current classifications. Cooperation to this end is sought to eliminate much unnecessary confusion on the part of both concerned.

## PERSONAL NOTE

*Dr. Henry A. Siegal,* 1109 Professional Building, has been elected to Fellowship in the newly organized American Academy of Obstetrics and Gynecology and will be listed as one of the Founders of the Academy.

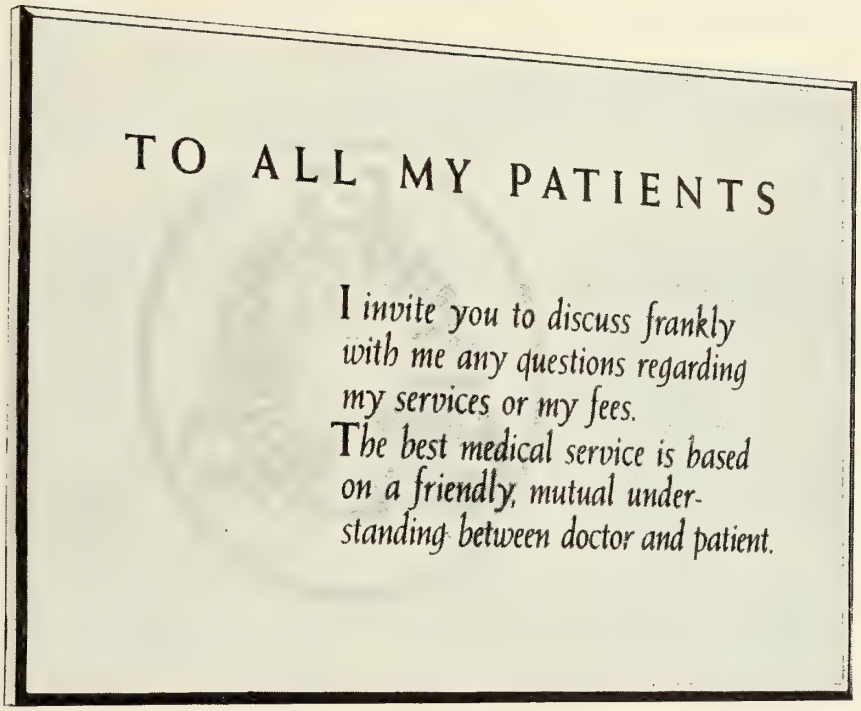



HERE ARE SYMPTOMS OF POLIO listed by the National Foundation for Infantile Paralysis. They may—or may not—mean polio. Call your doctor and then, if help is needed, contact your local chapter of the National Foundation. When polio is around, these precautions are recommended: Keep children with their own friends and away from people they have not been with right along. Don't become exhausted through work or hard play Don't stay in cold water too long or sit around in wet clothes. Avoid becoming chilled. Always wash hands before eating.

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In the Quarterly Journal of Studies on Alcohol Dr. Marcus Crahan, Senior Physician, County Jails Division, Los Angeles, writes of work with alcoholic inmates of the county jail. In commenting on the lack of constructive programs for the rehabilitation of alcoholics NOT YET involved with law enforcement agencies Dr. Crahan says

**"The group made up of skilled craftsmen or businessmen has been largely ignored in the planning of programs of treatment of alcoholism. These alcoholics have equally been ignored or rejected by the medical profession—not, however, without reason.**

**"In the grip of his addiction, the alcoholic is likely to be noisy, belligerent, discourteous, impulsive and untrustworthy. He fails to follow orders or to keep appointments or his word. He is unreasonable, self-centered and overt in his lack of respect for or conformity to convention or authority. It is small wonder that physicians become weary of responding to his repeated calls, of playing wet nurse to the problem child who seems defiant in his refusal to help the doctor or himself."**

To many this may seem a harsh arraignment of the 4 to 4½ million victims of the disease alcoholism in our country today. Yet, as surprising as it may be, almost every recovered alcoholic will plead guilty to Dr. Crahan's indictment.

Although alcoholism is generally accepted today, by informed persons, as one of the major diseases of mankind, facilities for proper care and treatment of its victims have too long been inadequate.

Every doctor is faced, occasionally, with a problem of alcoholism. These cases can seldom be successfully treated in the home, or in the doctor's office. The general hospitals are not equipped to cope with this type of patient.

The alcoholics of this country are a true cross section of the population. Some are afflicted with complicating mental illnesses or emotional instability. Data available in agencies with wide experience in combating the disease alcoholism indicate, however, that fully 75% of the problem drinkers of this country are what may be termed basic alcoholics—people who are mentally and emotionally normal, when sober. Special facilities are essential for successful treatment of the basic alcoholic.

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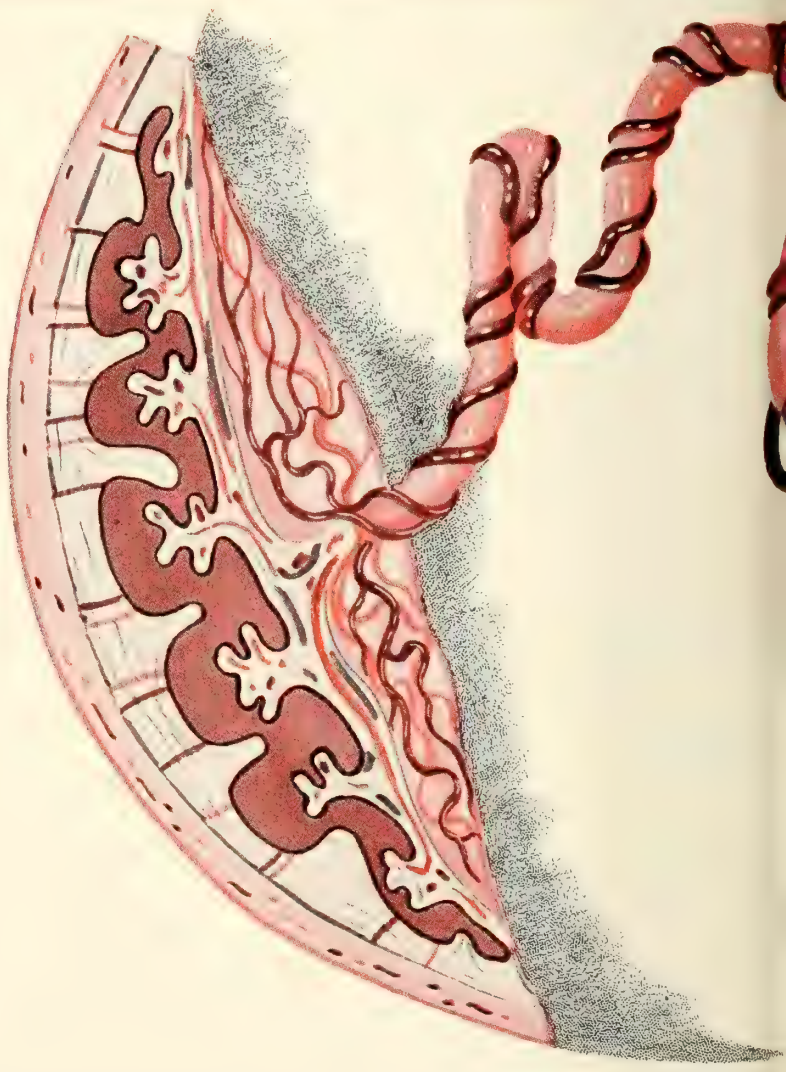
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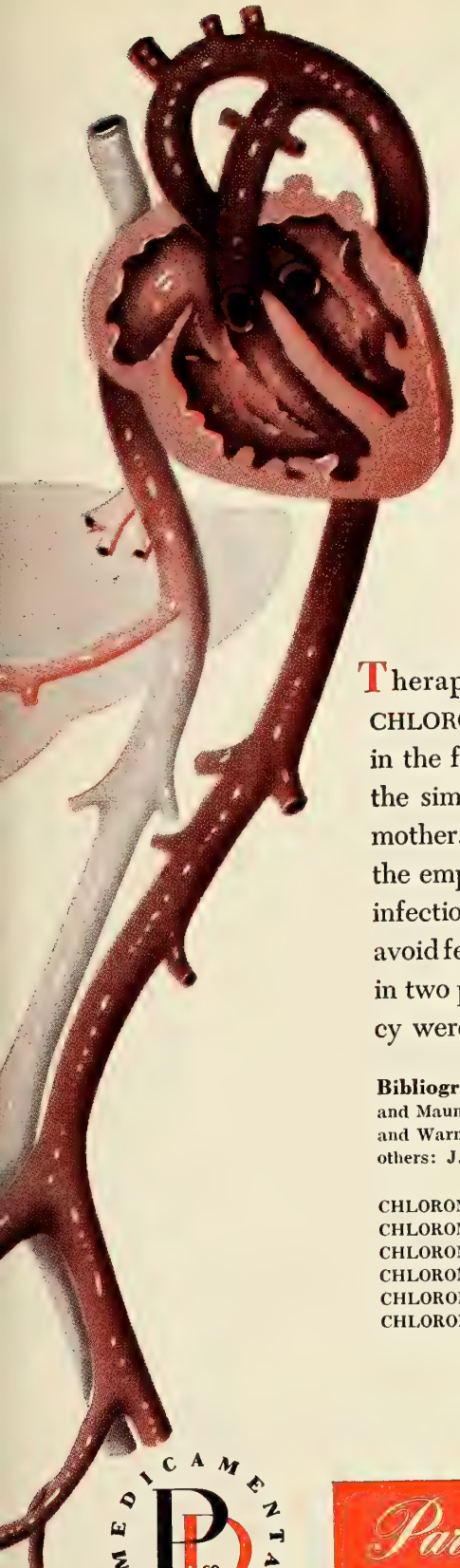
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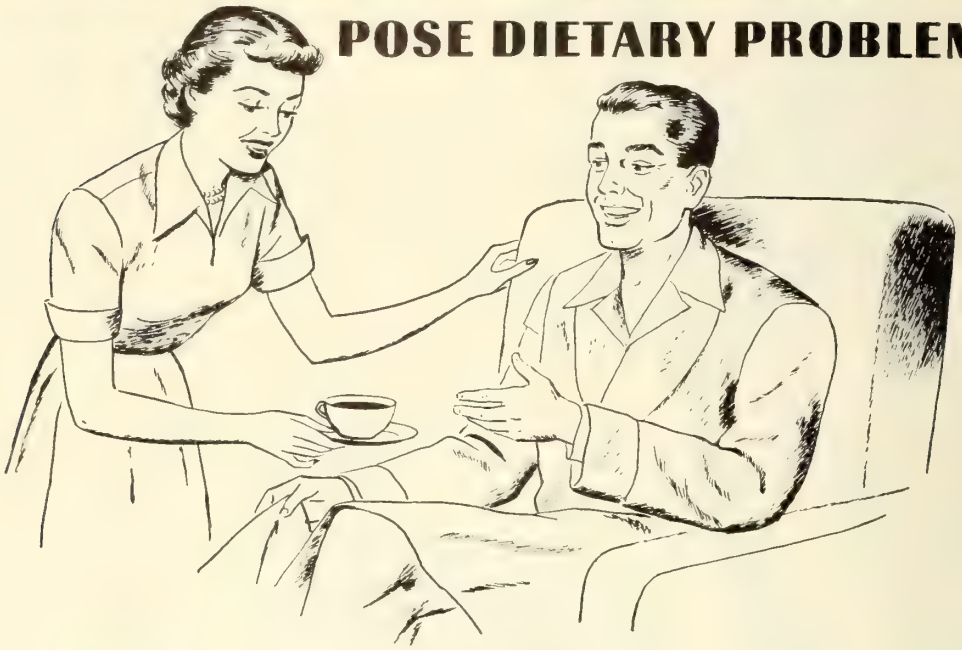
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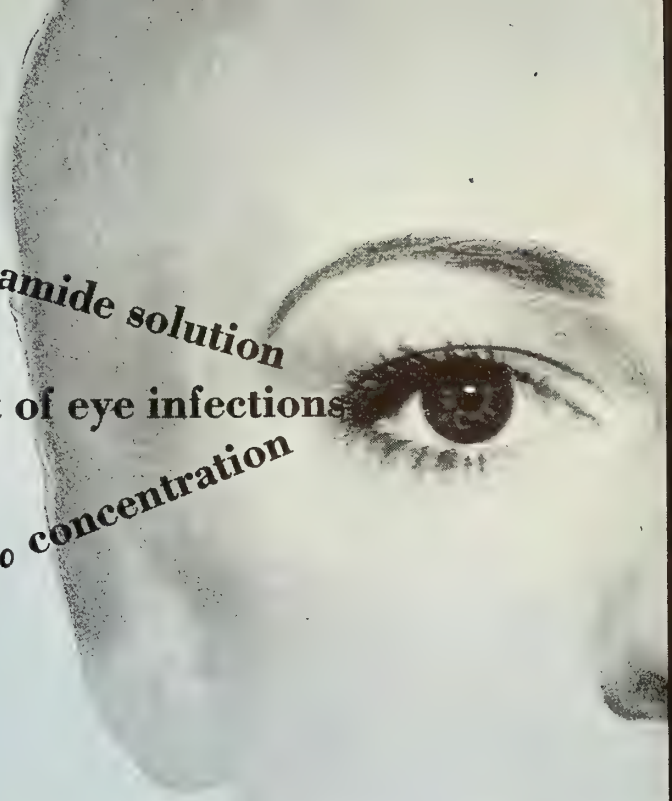
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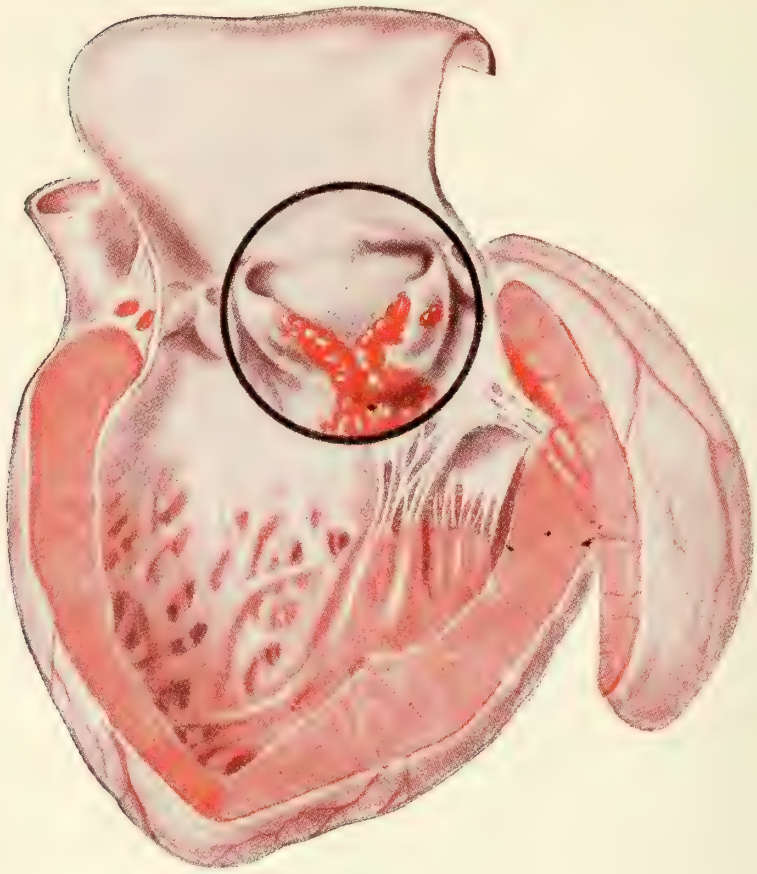
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*Blake, F. G.; Friou, G. J., and Wagner, R.R.: Yale J. Biol. and Med. 22:495 (July) 1950.*

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1. Perloff, Wm. H., (1951) Treatment of the Menopause. II. Amer. J. Obst. & Gynec., 61:670, March. 2. Reich, W. J., et al. (1951), A Recent Advance in Estrogenic Therapy. I. American J. Obst. & Gynec., 62:427, August.

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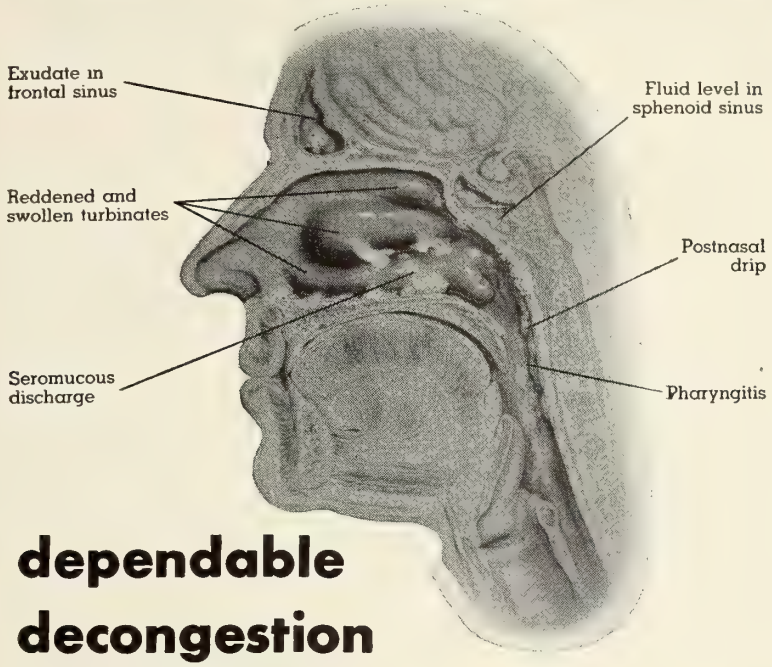
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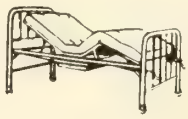
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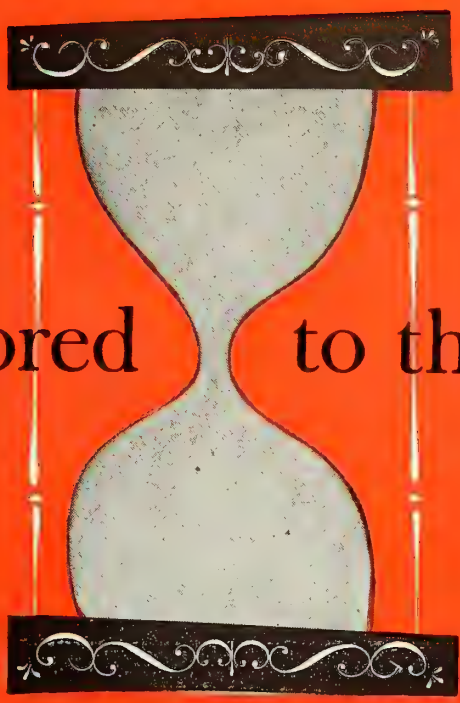
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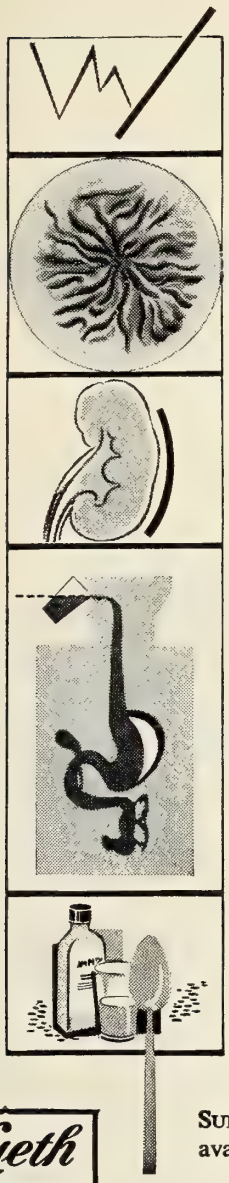
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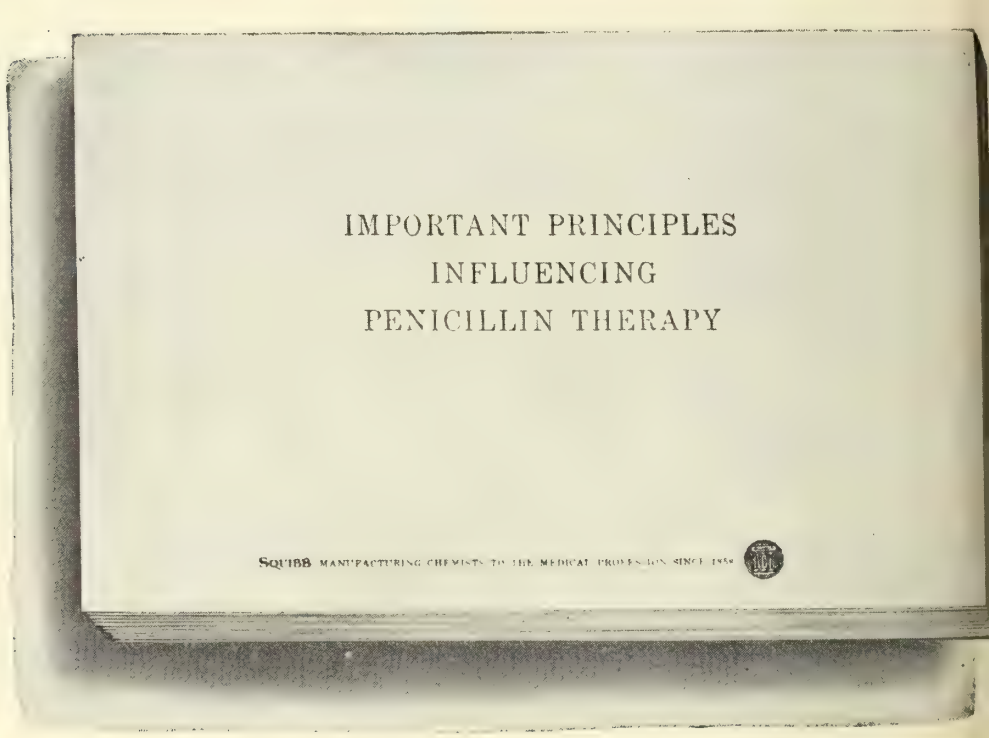
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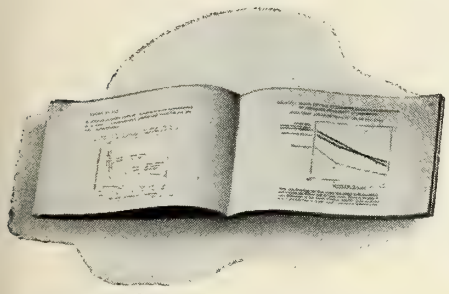
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# *Therapy for Vascular Headache to Reverse the Physiologic Disturbance*

*Headache, a problem encountered in all kinds of medical practice, may occur in association with any of a variety of disorders, some organic, other purely functional.*

**Among the several types, functional headaches present the** greatest problem because of their obscure etiology and recurrent nature.

Among these are:

Migraine (both classical and variant forms)
Tension headache
Psychogenic headache
Histaminic cephalgia

Wolff and his co-workers established that the pain of these headches is due to disturbance of the tonus of cranial blood vessels — hence the term *vascular headaches.*

**The craniovascular changes** associated with the several phases of the typical migraine attack are:

*Vasoconstriction* — to which the visual prodromata are attributable. It is possible to abort the attack during this phase in all but a few cases. (See treatment below.)

*Vasodilatation* — as the vessels lose their tone, exaggerated pulsations set in, resulting in the throbbing pain which characterizes vascular headache. Treatment for the attack is still effective during this phase. (See below.)

*Vessel Edema* — if the vasodilation continues for too long, vessel walls become edematous; this changes the character of the pain to a steady, intense aching. The attack can now no longer be checked, even with maximum dosage of specific drugs. *Moreover, sustained headache often induces reflex neck muscle tension, a source of residual pain.*

**Therapy: 1. Reduce the frequency of attacks** — psychotherapy and regulation of living habits to avoid fatigue and nervous tension.

**2. Relieve the acute attack** — of the numerous drugs which have been tried, ergotamine and its derivative preparations have proved most effective. The newest product is oral tablets of Cafergot®, N. N. R. (ergotamine with caffeine 'Sandoz'). When dosage is adjusted to the needs of the individual, Cafergot will give good relief in 85% of cases. It enables a greater number of patients to benefit from early administration since the oral route simplifies treatment as compared to parenteral therapy.

**The dosage procedure is:**

**1.** Take 2 tablets at first sign of the attack.
**2.** If attack continues, take one additional tablet every ½ hour until attack is terminated *(max. 6 tabs. per attack).*

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GENERAL REFERENCES: DeJong, R.: Chicago M. Soc. Bull *54:* 106, 1951. Friedman, A.: Modern Headache Therapy, St. Louis, C. V. Mosby Co., 1951. Wolff, H.: Headache and Other Head Pain, N. Y., Oxford Univ. Press, 1948.

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Ward, L. E., Slocumb, C. H., Polley, H. F., Lowman, E. W., and Hench, P. S.: *Proc. Staff Mtgs., Mayo Clinic* 26: 361, September 26, 1951.

*Literature on Request*

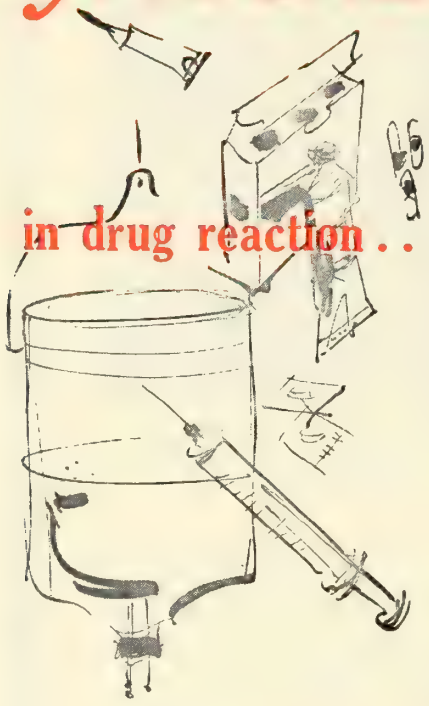
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ARIZONA MEDICINE
Journal of Arizona Medical Association

VOL. 9, NO. 4 APRIL, 1952

# Original ARTICLES

## ONE HUNDRED AND ELEVEN SURGICAL LESIONS OF THE STOMACH

KENNETH C. SAWYER, M.D., FRANK B. McGLONE, M.D.
Denver, Colorado

This study of one hundred eleven surgical lesions of the stomach treated in our private practice since January of 1946 was carried out primarily to evaluate the present trend toward a more aggressive approach in treating cancer of the stomach. In this presentation the conditions necessitating operation on the stomach will be enumerated and the personal feeling of one of us (K.C.S.) toward chronic gastric ulcer will be presented for discussion. We shall also attempt to evaluate, from statistics evolved in treating this series of cases, the technical improvements that should extend the operability of cancer of the stomach.

TABLE 1—Conditions for which Operation Was Performed

| | |
|---|---|
| Hypertrophic Pyloric Stenosis | 8 |
| Diverticula | 2 |
| Gastric Ulcer | 40 |
| Gastro-Jejunal Ulcer | 10 |
| Gastritis | 2 |
| Malignancies | 43 |
| Benign Tumors | 4 |
| Foreign Bodies | 2 |
| Total | 111 |

Table 1 lists the conditions for which operation on the stomach was performed. There were eight patients with hypertrophic pyloric stenosis and two with gastric diverticula. Forty patients were operated upon for chronic gastric ulcer and ten individuals required operation for gastrojejunal ulceration. A stomach operation was performed upon two persons with gastritis. Significantly, forty-three or 38.7% of the patients in this series had a gastric malignancy, of which thirty-eight were carcinoma, two leiomyosarcoma, two lymphosarcoma, and one pationt had a hemiangioendothelioma. Four benign tumors of the stomach were encountered, one of these was a solitary polyp, one was polyposis en nappe and there were two benign leiomyomata. There were two foreign bodies in this series both of which produced symptoms of sufficient severity to make surgical intervention mandatory. In one instance an open safety pin was found at operation. The other interesting foreign body was a large trichobezoar filling the stomach of a four and one-half year old child.

Table 2 lists the operative procedures used in attempting to correct the preceding pathological conditions. Eleven patients died in the hospital making the overall operative mortality 9.9%. A breakdown of the mortality will be further considered in another phase of this presentation.

TABLE 2—Operative Procedures

| | |
|---|---|
| Subtotal Gastrectomy | 62 |
| Total Gastrectomy | 13 |
| Pyloromytomy | 8 |
| Laparatomy Only | 6 |
| Takedown and Subtotal Resection | 5 |
| Vagotomy | 5 |
| Local Excision of Tumor | 3 |
| Diverticulectomy | 2 |
| Posterior Gastro-enterostomy | 2 |
| Enterostomy | 2 |
| Gastrotomy | 2 |
| Vagotomy Ligation Left Gastric Artery Repair Hiatus Hernia | 1 |
| Total | 111 |

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## CHRONIC GASTRIC ULCER

We believe that cancer can develop in a chronic gastric ulcer just as it does in a skin ulcer or chronic ulcer in other parts of the body. Differences of opinion exist regarding whether or not a chronic gastric ulcer becomes malignant or was malignant from the onset. Abrahamson and Hinton(1) have followed one hundred sixty-five cases of gastric ulcer over periods of one to nineteen years and have failed to find a single case in which the transformation from a benign ulcer to a gastric neoplasm could be proved. That cancer occasionally develops in a gastric ulcer is generally recognized.

It is apparent that the percentage of error (10.1% to 19.8%; and 11.6% in this series) in mistaking a gastric cancer for a benign ulcer is greater than the surgical mortality for subtotal gastrectomy when used for treating chronic gastric ulcer. (Table 3). Thus we believe that, with a very few exceptions, all gastric ulcers should be considered surgical problems. Whether the lesion is malignant from its onset or has become malignant is not the important factor.

TABLE 3—Mortality Patients Treated For Chronic Gastric Ulcer

| | Patients | Died | Mortality |
|---|---|---|---|
| Vagotomy | 1 | 0 | 0 |
| Vagotomy Ligation Left Gastric Artery | 1 | 0 | 0 |
| Subtotal Gastrectomy | 38 | 1 | 2.6 |
| Total Operations | 40 | 1 | 2.5 |

### *Technical Improvements That May Be Factors In Extending Resectability of Cancer of the Stomach*

Past statitsics indicate that the surgical treatment of cancer of the stomach leaves a great deal to be desired. They can be improved only by earlier diagnosis and by more extensive excision of the cancer bearing portion of the stomach and contiguous structures when the condition is encountered in the operating room. No gastric malignancy in this series was diagnosed before symptoms appeared. Gastroscopy has been very valuable in orienting us as to the type of lesion with which we were dealing. Advantage was taken of this adjunctive diagnostic procedure in nineteen instances. In this small group the gastroscopist discovered two malignant tumors not demonstrable by careful roentgenologic examination. He labeled two tumors malignant that the radiologist thought were benign ulcers and, in addition, pronounced a tumor malignant that the pathologist considered benign. Subsequent events proved that the controversial lesion was malignant. The gastroscopist erred one time in calling a malignant ulcer benign, although exploration was advised because of the location of the lesion.

TABLE 4—Mortality Patients Treated For Gastric Mortality Malignancies

| | Patients | Died | Mortality |
|---|---|---|---|
| Laparatomy | 6 | 2 | 33.3 |
| Palliative Procedures | | | |
| Posterior Gastro-enterostomy | 2 | 0 | 00.0 |
| Enterostomy | 2 | 2 | 100.0 |
| Resection | | | |
| Subtotal | 22 | 2 | 9.9 |
| Total | 12 | 3 | 25. |
| | 43 | 9 | 20.9 |

Table 4 shows the overall operative mortality in the forty three malignancies treated by surgical measures.

It is believed that the five year survival rates will be materially increased over past statistics because a higher percentage of patients were given the advantage of resection. The following technical improvements that have made this possible warrant some discussion.

1. The thoracic and abdominothoracic incision with the improvements in anesthesia which have made this approach possible.
2. Total gastrectomy.
3. The resection of organs close to the stomach when invaded by the malignant process.

When one considers that from 30% to 50% of all carcinomas of the esophagus occur in the lower one-third of this organ and that 25% (this series) of all carcinomas of the stomach are near or invade the cardia, the value of the thoracic and abdominothoracic approach becomes obvious. Prior to the advent of this incision these lesions were considered inoperable and the patient relegated to the hopeless category. The thoracic or abdominothoracic approach was utilized sixteen times in treating the malignant lesions of the stomach in the group being reviewed.

Total gastrectomy, as advocated by Longmire(2) has undoubtedly increased the range of operability of cancer of the stomach and should have a favorable effect upon future survival statistics. It is believed that in large lesions (Figure 2) and especially in malignancies

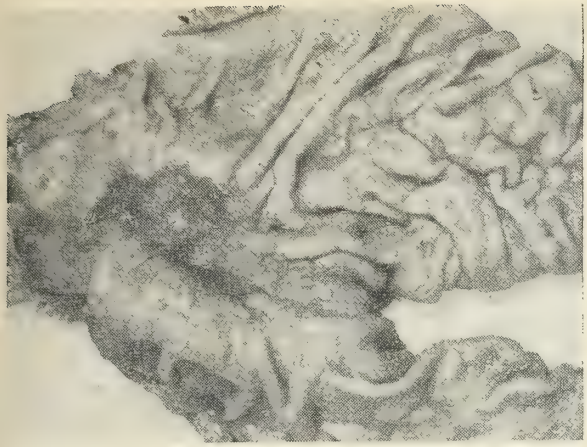


FIGURE 1. Cancer of the stomach occurring in a patient with a twenty-five year history of ulcer and an eight year roentgenologic diagnosis of chronic gastric ulcer.

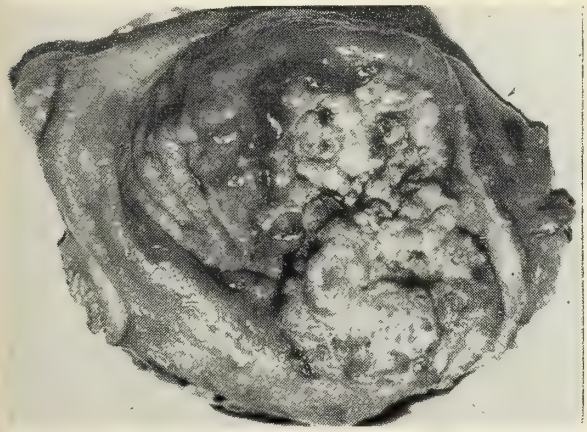


FIGURE 2. Large polypoid cancer of the stomach treated by total gastric resection.

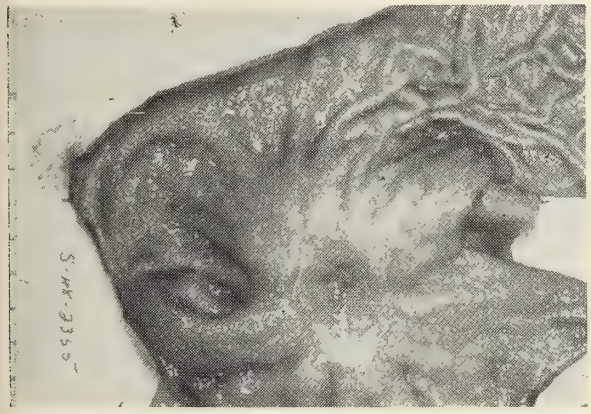


FIGURE 3. Cancer of the stomach near cardia—requiring total gastrectomy for removal.

near the cardiac end of the stomach (Figure 3) total gastrectomy is the operation of choice. In using this procedure however, one must remember that it carries a higher operative mortality and that many of the surviving patients will have a significant nutritional disturbance. The utilization of the Roux-Y esophagojejunostomy improves the mechanics of this operation and diminishes the likelihood of a leak at the line of anastomosis. Total gastrectomy was performed in twelve patients with gastric cancer. Three patients died in the hospital, a 25% operative mortality. Three are still alive, but only one of these has survived longer than two years.

The resection of organs close to the stomach when invaded by the malignant process in treating gastric cancer is mandatory if we are striving to achieve more than simple palliation for our efforts. We do not hesitate to remove a portion of the liver when it is invaded by continguity from carcinoma of the stomach. Frequently a large percentage of tissue in an apparently inoperable mass is inflammatory. It is generally conceded that the greater omentum should be removed in all malignant lesions of the stomach. We have resected a portion of the pancreas on occasions and have been favorably surprised at the low incidence of pancreatic fistulae following this procedure. If the malignant lesion invades the head of the pancreas, a more serious problem is encountered. One should weigh the operative mortality and the patient's future discomfort against the likelihood of a cure before removing this important segment of the organ. The spleen is seldom invaded by metastatic carcinoma, but its removal facilitates exposure of the gland bearing area around the stomach. Its removal when one is operating for gastric cancer should be routine. In this series a portion of the liver was removed with the stomach in four instances; a portion of the pancreas with the stomach on eight occasions; and a portion of the pancreas, colon and stomach in four instances. Of this group of sixteen patients four have survived as follows: one for six months, two for one and one-half years and one for four and one-half years.

## SUMMARY

1. We have presented a brief review and evaluation of one hundred eleven surgical lesions of the stomach treated since January 1946.

2. Tables 1 and 2 show the types of lesions found and the Operations performed.

3. The importance of gastroscopy in evaluating gastric lesions is stressed.

4. Technical improvements that may aid in extending resectability of gastric carcinoma have been discussed.

## BIBLIOGRAPHY

1. Abrahamson, R. H., and Hinton, J. W. Surg., Gyn., and Obs. 1947, 83:481-490
2. Longmire, W. P. Jr. Surg., Gyn., and Obs. 1947, 84:21-30.

# ROENTGEN AND BIOCHEMICAL CHANGES IN PANCREATIC CARCINOMA

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The history of otherwise unexplained upper abdominal complaints more frequently than in the past leads the clinician to the suspicion of pancreatic cancer. A dull persistent pain high in the abdomen, referred to the back or sometimes to the lower abdomen, is particularly significant and justifies further investigation. Jaundice, weight loss, anorexia, constipation, nausea and vomiting particularly when associated with this type of pain are very suggestive of pancreatic neoplasm. The finding, in addition, of an upper abdominal mass or enlarged gallbladder, perhaps with transient glycosuria or a diabetic type of glucose tolerance curve, make an exploratory operation practically mandatory.

It is important to note, therefore, that in about 50% of patients(1) examined roentgenologically, evidence suggesting pancreatic neoplasm was obtained. When these data was supplemented by a study of the external secretion of the pancreas obtained from the duodenum after the administration of secretin, the percentage of correct diagnoses is materially increased. Both of these types of investigation will be the subject of this review. It is the authors' experience that they are the most easily performed with accuracy and are most productive of reliable data. For completeness, reference must be made also to the study of the cytology of duodenal aspirates(2) which, in our hands, has been unsatisfactory. Our enzyme studies have been limited to amylase, largely because this enzyme is stable and determinations can be reproduced with simple technics with an accuracy of about 98%.

The pancreas does not differ in roentgen density from its surrounding tissues. It cannot therefore be visualized directly unless there is calcification within it. Visualization of the pancreatic artery is sometimes obtained by aortography but the practical value of the procedure has not been fully explored. The roentgen data relative to the pancreas are obtained primarily therefore by studying adjacent viscera which can be outlined radiologically. The head of the pancreas lies in the concavity of the duodenum. It is surrounded on three sides by the duodenal curve and the prepyloric area of the stomach. The head is covered anteriorly by the gastric antrum, the duodenum and the transverse colon. Posteriorly there are the vena cava and right renal vessels and, to the left, the aorta.

The neck of the pancreas, which connects the head to the body, runs forward, upwards and to the left. In front there is the pylorus and first part of the duodenum; in back, the portal vein.

The body extends to the left at the level of the first or second lumbar vertebra. Anteriorly the stomach is separated from it by the omental bursa while inferiorly there is the transverse mesocolon. The body has a prismatic form and is largest in front of the left kidney.

The tail extends across the left upper abdomen to end adjacent to the infero-medial surface of the spleen. It may present an abrupt blunt ending or may taper off in an elongated narrow segment.

These anatomic relations indicate clearly that in seeking a pancreatic mass, the most revealing roentgen examination is likely to be that of the gastro-intestinal tract. On the other hand, the occasional difficulty in differentiating a left renal neoplasm also will be appreciated. The gastro-intestinal tract may be outlined with air or, as is more usual, with barium.

The pancreatic dust of Wirsung opens into the ampulla of Vater in the majority of cases but occasionally empties independently into the duodenum. The common bile duct and the pancreatic duct join above a common sphincter in at least 60% of cases. In about one-third there are separate openings into the duodenum. Of more significance in the roentgen interpretation however is the variation in the position of the common bile duct since a dilated duct may be visualized by the pressure it exerts. Most often, the duct passes proximal to the knee of the duodenal bulb, less frequently distal to it and least often it crosses at about the level of the ampulla of Vater.

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The pancreatic anomalies are worth listing. According to Poppel they are:

1. A separation of the part of the head known as the uncinate process which then forms a lesser pancreas.

2. A growth of the pancreas around the duodenum which it may encircle and incidentally even may obstruct.

3. The variations in the termination of the pancreatic duct described above.

4. Accessory pancreas sometimes found in the wall of the stomach or jejunum and rarely in a Meckel's diverticulum.

5. Displacement of the main pancreatic duct by a congenital diverticulum of the duodenum near the ampulla of Vater.




**Fig. 1. Autopsy specimen of carcinoma of the head of the pancreas showing distention of the duodenal loop and encroachment on the medial wall of the duodenum.**

The pressure defect produced by a pancreatic mass will depend on its location. Hick and Mortimer(4) reported that of 50 cases, 22 were in the head and 23 in the tail with 4 infiltrating the whole gland. A tumor of the head of the gland is likely to produce widening of the duodenal loop but with edges that are poorly defined (Fig. 1). While this finding is probably the most frequent, it is also the most difficult to evaluate because the apparent size of the loop must be judged according to the habitus of the patient and the position in which the examination is made. A stomach which is high and transverse, in a hypersthenic individual, will expose the normal duodenal loop more completely than usual and this appearance is exaggerated in the horizontal position. Indeed the correct interpretation may be so elusive that the roentgenologist ordinarily requires evidence of localized pressure on some portion of the duodenum or gastric antrum before suggesting the diagnosis. On the other hand, widening alone when judged critically by the experienced observer, will often justify laboratory investigation of the type to be described later. As Poppel points out, the extrinsic pressure, by its rounding or ironingout effect, changes the direction of the mesial ends of the duodenal mucosal folds and with severe pressure, the mucosal pattern may be greatly altered or even lost. The pressure defect may be localized above or below the ampullary region or may be general. There may be one smooth rounded-out contour or multiple scalloped-shaped defects.

The widened duodenal loop may not be a uniform change. The loop may be displaced to the right and anteriorly. (Fig. 2). The loop may be fixed mesially and normal expansion interfered with. (Fig. 3). The duodenum may be stenosed. (Fig. 4). There may be irregularity in outline with alteration or even destruction of the mucosal pattern. There may be alterations in the neuromuscular mechanism of the duodenum even in the absence of infiltration. This is manifested by abnormal motility of the duodenum with deep indentations and a churning to-and-fro movement.

Other evidence of a mass in the head of the pancreas includues upward or forward displacement of the stomach, downward and forward displacement of the transverse colon as well as pressure defect produced on the duodenum by a dilated common bile duct. A carcinoma in the region of the ampulla of Vater, whether it arises in the duodenum or in the pancreas, may require careful compression studies of this portion of the duodenum. The reversed 3 sign des-

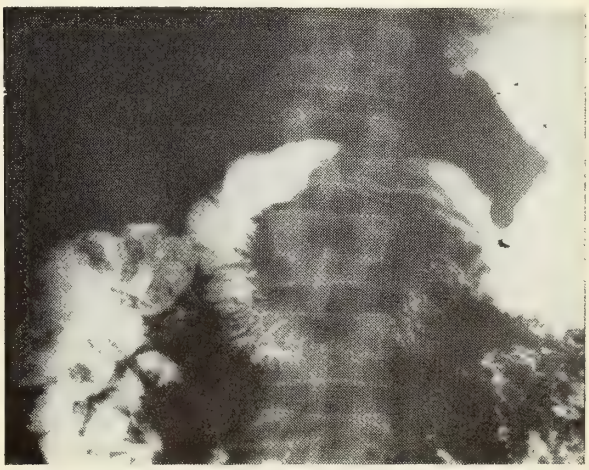


**Fig. 2. Autopsy diagnosis, carcinoma involving entire pancreas reaching both kidneys and with extensive metastases. Roentgen examination demonstrated widened duodenal loop with compression and elevation of the gastric antrum. History of abdominal pain, loss of weight, anorexia, nausea and vomiting for nine weeks.**



Fig. 3 Operation revealed a firm, nodular mass about 3 cm. in diameter in head of pancreas obstructing the common duct. Roentgen examination revealed localized compression at the junction of the 2nd and 3rd portions of the duodenum with flattening of the mucosal folds. History of pruritis, jaundice, diarrhea and weight loss of 6 weeks.

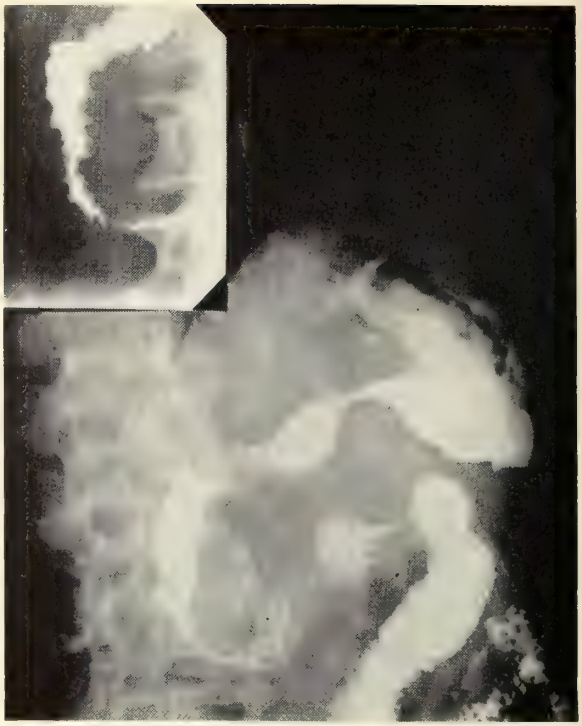


Fig. 5. Operation revealed a large hard mass in the head of the pancreas. Roentgen examination showed a widened duodenal loop, nodular compression of descending duodenum, compressed 4th portion and elevated, compressed contiguous stomach. History of dull epigastric pain, 1 month, jaundice 1 week.



Fig. 4. Autopsy revealed a small firm indurated pancreas. A 1 cm. tumor mass invaded the common duct and pancreatic dust, apparently arising from the wall of the duodenum. Roentgen examination revealed partial obstruction in descending duodenum. History of cramping paraumbilical pain for 1 day, jaundice and fatigue for 6 weeks



Fig. 6. Autopsy revealed carcinoma in head of pancreas with adherent and possibly invaded hepatic flexure. Barium enema showed persistent filling defect hepatic flexure. History of weakness one year.

cribed by Frostberg is a relatively infrequent finding, which in our experience is not entirely dependable. The finding of a palpable mass is of course of great assistance in the definitive diagnosis of pancreatic carcinoma.

Tumors in the neck of the pancreas may indent the gastric antrum displacing it upward and to the left. When in the body, the stomach is displaced forward with compression and

sometimes there is invasion of the posterior wall and lesser curvature. (Fig. 5). When the tail is involved, the stomach may be displaced to the right. When the tumor is large, the mid-transverse colon is displaced forward and downward. (Fig. 6). The ascending duodenum and the duodeno-jejunal flexure are indented and displaced forward, either upward or downward.

Borak(4) has stated that the duodenum is never displaced anteriorly by the enlarged pancreas. We agree however with Harper(5) who has seen anterior displacement without widening of the duodenal curve. Indeed, on rare occasions, carcinomas grow in atypical channels. It is well to keep in mind the radiological classification of pancreatic cysts(2) since carcinomas may be found in the same locations. Included are the gastro-colic type where enlargement takes place below the greater curve of the gastric antrum but above the transverse colon and the mesocolic type which indents the lower curve of the body of the stomach and displaces the distal transverse colon cephalad, the upper descending colon being displaced laterally.

To be considered in differential diagnosis are conditions giving rise to enlargement of the pancreatic lymph nodes, lymphoblastoma, metastatic carcinoma, infectious mononucleosis, tuberculosis, retroperitoneal sarcoma, and aneurysm. Elaboration of this phase is beyond the scope of the present report and indeed the differentiation may be made only with great difficulty in most cases unless there is guiding clinical data.

We will not enter into the subject of the roentgen examination itself since this is discussed in any good text book. Unfortunately, the wide gap between the description of what should be sought and the critical evaluation of the findings in a given case can only be closed by experience and not by more descriptive words.

The roentgenographic diagnosis of pancreatic tumors can be supplemented by biological diagnosis based upon direct study of the external pancreatic secretion with secretin.(6, 14). The biological approach is particularly useful in small tumors of the head and body of the pancreas which may be missed in the roentgen examination. It is also of value in precisely localizing the site of disease in patients with obstructive jaundice.

The secretin test of external pancreatic secretion is based upon the qualitative and quantitative study of the duodenal drainage following the intravenous administration of a purified secretin preparation. The hormone secretin stimulates the pancreas to produce a thin watery, high bicarbonate, low enzyme juice. The pancreatic response to secretin is defined by these three factors, viz., 1. volume, 2. bicarbonate concentration, 3. total enzyme secretion.(15). In diseases of the pancreas in which there is obstruction within the pancreatic ducts, it is the volume response which is primarily depressed; in diffuse parenchymal diseases, the qualitative factors, bicarbonate and enzyme concentration also are diminished. Thus the alteration of pancreatic secretion produced by neoplasms of the pancreas depends upon the site and severity of pancreatic duct obstruction which they cause. (15).

The procedure of the secretin test has been described previously.(15, 16, 17). The test is performed upon subjects in the fasting state. After positioning a double-lumened pastro-duodenal tube in the duodenal loop by fluoroscopy, 1.0 clinical unit/kg. body weight of secretin is injected intravenously. Simultaneous gastric and duodenal aspirates are obtained fractionally by continuous electric suction for 80 minutes. The normal values of the three factors which characterize the pancreatic response to secretin have been determined by a statistical study of the data of 81 patients without pancreatic disease.(16). These norms are as follows:

| | *Mean* | *Mean Minus 2 sigma* |
|---|---|---|
| 1. Volume | 3.2 cc./kg. | 2.0 |
| 2. Bicarbonate | 108 meq./L | 90 meq./L. |
| 3.Amylase secretion | 14.2 u./kg. | 6.0 u./kg. |

The alterations in pancreatic secretion produced by tumors of the pancreas are illustrated by the data of 56 patients with pancreatic neoplasms in Table 1.

| Location of Tumor | Number of Cases | Average Pancreatic Response Total Volume cc./kg. | Total Amylase u./kg. | HC03 Conc meq./L. |
|---|---|---|---|---|
| Diffuse | 12 | 1.1 | 52 | 4.5 |
| Head | 26 | 1.4 | 81 | 5.0 |
| Body | 13 | 1.5 | 86 | 5.2 |
| Tail | 5 | 3.8 | 108 | 13.0 |
| Average Normal | 81 | 3.2 | 108 | 14.2 |
| Minimum Normal | | 2.0 | 90 | 6.0 |

Table 1. Summary of Secretin Response Data of 56 Patients with Tumors of the Pancreas

It will be noted that in the diffuse pancreatic tumors both the qualitative and quantitative factors are markedly depressed. This is the result of combined pancreatic duct obstruction and replacement of functioning parenchyma by tumor. Lesions of the head exhibit mainly diminution of volume response. The average bivarbonate and amylase values are only slightly depressed due to the presence, in some of the cases, of associated pancreatic fibrosis and to the secondary suppression of function which occurs after long standing ductal obstruction. Tumors of the body of the pancreas, in general, show less marked changes than tumors of the head. Obviously smaller ducts are obstructed and less parenchyma is affected. All 5 patients studied with tumors of the tail of the pancreas showed normal secretion. Neoplasms in this location cannot obstruct a main pancreatic duct nor destroy sufficient functioning parenchyma to significantly reduce the pancreatic response to secretion. Thus the secretin test is of no value in the diagnosis of tumors of the tail of the pancreas.

Among these 56 patients, there were 2 cases with cancers of the pancreas (head and papilla of Vater) who exhibited normal volume responses. Both patients were not jaundiced. At operation, in neither case was there obstruction to either the common duct or the pancreatic duct. Both tumors had ulcerated and partially sloughed so that the ductal systems were not blocked. Two other patients, suspected of pancreatic malignancy, displayed low volume responses. At exploration, in neither case was any tumor found in the pancreas nor any lesion which could explain the "false positive findings." These may represent errors in technique.

Tumors contiguous to the pancreas do not produce an alteration of the pancreatic response to secretion unless there is actual invasion of the organ with resultant pancreatic duct obstruction or replacement of pancreatic tissue with malignant tumor. Table 2 lists the secretin response data of 16 patients with tumors of organs contiguous to the pancreas. Only cases 4 and 5, in which the tumors have secondarily invaded, the pancreas, show abnormal pancreatic secretion.

The biliary pigment response to secretin can be used in conjunction with the pancreatic response to localize precisely the site of pathology in patients with obstructive jaundice. The biliary pigment response has been previously reported.(15, 17, 18). It describes the biliary flow following intravenous secretin. Based upon the behavior of the duodenal biliary pigment concentration (icterus index) during the secretin test, three types of response can be classified as follows:

1. Type A. Bile disappears during the secretin test—normal gallbladder function.

2. Type B. Bile persists in high concentration during the secretin test—non-functioning gallbladder or post-cholecystectomy state.

3. Type D. Bile is obsent through the secretin test, no B bile after $MgSO_4$—complete biliary obstruction.

| Tumor Site | Pancreatic Response Total Volume cc./kg. | HCO3 Conc. meq./L. | Total Amylase u./kg |
|---|---|---|---|
| 1. Duodenum Ca. | 7.5 | 90 | 30.0 |
| 2. Retroperitoneal Ca. | 3.1 | 113 | 29.0 |
| 3. Ca. Common Ouct | 2.1 | 93 | 13.0 |
| 4. Ca. Pylorus-Head Pancreas | 1.2 | 101 | 5.6 |
| 5. Ca. Fundus-Tail Pancreas | 2.2 | 120 | 3.8 |
| 6. Ca. Common Duct | 2.5 | 125 | 7.0 |
| 7. Retroperitoneal Ca. | 3.2 | 98 | 15.3 |
| 8. Ca. Left Kidney | 3.1 | 98 | 31.0 |
| 9. Retroperitoneal Ca. | 2.7 | 113 | 8.7 |
| 10. Ca. Gallbladder—Common Duct | 2.3 | 91 | 16.3 |
| 11. Ca. Common Duct | 3.0 | 111 | 24.3 |
| 12. Ca. Portal Fissure | 2.9 | 109 | 7.4 |
| 13. Retroperitoneal Sarcoma | 3.2 | 121 | 22.7 |
| 14. Retroperitoneal Sarcoma | 2.1 | 90 | 21.2 |
| 15. Ca. Common Duct | 2.1 | 131 | 25.1 |
| 16. Ca. Duodenum | 2.3 | 94 | 7.6 |

Table 2. Secretin Response Data of 16 Patients with Tumors of Organs Contiguous to the Pancreas

These three responses have been correlated

There are four possible combinations of pancreatic and biliary pigment responses in the secretin test. If jaundice is absent and the pancreatic response is abnormal (normal biliary pigment response with abnormal pancreatic response), the lesion is likely to be in the pancreas involving the body or head. Jaundiced patients with abnormal pancreatic secretion (abnormal pancreatic response with abnormal biliary pigment response) probably have lesions involving the head of the pancreas or the papilla of Vater. Jaundiced patients with normal pancreatic secretion (abnormal biliary pigment response with normal pancreatic response) have lesions of the extrahepatic biliary tract, whether calculus or tumorous cannot be determined from the test data. Finally patients who present a normal biliary flow and normal pancreatic secretion (normal biliary pigment response with normal pancreatic response) should be suspected by inference of having parenchymal dis-

| PANCREATIC RESPONSE | | | | BILIARY RESPONSE | | |
|---|---|---|---|---|---|---|
| Total Volume cc./kg. | HC03 Conc. meq./L. | Total Amylase u./kg. | Uancreatic Response | Biliary Pigment Curve | Biliary Pigment Response | Operative Findings |
| 1. Normal Pancreatic Response— Normal Biliary Pigment Response | | | | | | |
| 3.4 | 105 | 6.8 | Normal | A | Normal | Hepatitis |
| 2.6 | 103 | 13.0 | Normal | A | Normal | Hepatitis |
| 4.7 | 98 | 11.4 | Normal | BP | Normal | Biliary Cirrhosis |
| 3.4 | 90 | 14.6 | Normal | BP | Normal | Biliary Cirrhosis |
| 2. Normal Pancreatic Response— Abnormal Biliary Pigment Response | | | | | | |
| 3.4 | 134 | 22.4 | Normal | D | Abnormal | Stenosis Common Duct |
| 2.5 | 106 | 6.0 | Normal | B | Abnormal | Common Duct Stone |
| 3.0 | 111 | 24.3 | Normal | D | Abnormal | Ca. Common Duct |
| 2.1 | 131 | 25.1 | Normal | D | Abnormal | Ca. Common Duct |
| 3. Abnormal Pancreatic Response—Normal Biliary Pigment Response | | | | | | |
| 2.7 | 59 | 2.2 | Abnormal | A | Normal | Chronic Pancreatitis |
| 1.4 | 94 | 7.3 | Abnormal | A | Normal | Ca. Pancreas (Body) |
| 1.3 | 121 | 7.9 | Abnormal | A | Normal | Ca. Pancreas (Body) |
| 1.7 | 114 | 13.8 | Abnormal | A | Normal | Ca. Pancreas (Body) |
| 4. Abnormal Pancreatic Response—Abnormal Biliary Pigment Response | | | | | | |
| 0.5 | 44 | 0.4 | Abnormal | D | Abnormal | Ca. Pancreas (Head) |
| 1.0 | 104 | 3.7 | Abnormal | D | Abnormal | Ca. Papilla Vater |
| 1.4 | 99 | 12.7 | Abnormal | D | Abnormal | Ca. Pancreas (Head) |
| 1.8 | 70 | 2.2 | Abnormal | D | Abnormal | Ca. Pancreas (Head) |

Table 3. Data of Cases Illustrating the Use of the Pancreatic and Biliary Piyment Responses of the Secretin Test in Precisely Localizing Pathology in Patients with Jaundice.

ease of the liver. These principles are illustrated in Table 3.

## SUMMARY

When pancreatic carcinoma is suspected, considerable confirming data can be obtained by roentgen and biochemical methods. Radiographic examination of the gastro-intestinal tract is particularly useful in detecting the larger tumors of the head, body and tail as well as those which infiltrate contiguous organs. A qualitative and quantitative study of the duodenal drainage following the intravenous administration of a purified secretion preparation yields additional data. Where there is obstruction within the pancreatic ducts, it is the volume response which is primarily depressed. In diffuse parenchymal disease, the qualitative factors, bicarbonate and enzyme concentrations also are diminished. The results of these examinations with pancreatic carcinomas in various locations are detailed.

### BIBLIOGRAPHY

1. Dashiell, G F. and Palmer, W. L., Arch. Int. Med. 81:173, 1948.
2. Lemon, H. M. and Byrnes, W. W., J.A.M.A , 141:254, 1949.
3. Hick and Mortimer, J Lab. and Clin. Med., 19, 1058.
4. Borak, J., Radiology 41, 170, 1943.
5. Harper, A. K., in A Text Book of X-ray Diagnosis by British Authors, Edited by Shanks, S. C. and Kerley, P., W B. Saunders and Company, Philadelphia, 1950.
6. Hammarsten, E., Agren, G., and Lagerlof, H., Acta Med. Scandinav., 92:256, 1937
14. Comfort, M. W., and Osterberg, A. E., Arch. Int. Med., 66:688, 1940.
15 Dreiling, D. A., & Hollander, F., Gastroenterology, 11:714, 1948.
16. Dreiling, D. A., & Hollander, F., Gastroenterology, 15:620, 1950.
17. Dreiling, D. A., Gastroenterology, 16:162, 1950.
18 Dreiling, D. A. and Lipsay, J. P., Gastroenterology—to be published.

# PRESENT DAY CONCEPT OF THE PHYSIOLOGY OF GASTRIC SECRETION AND ITS RELATIONSHIP TO THE SURGERY OF PEPTIC ULCER

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The etiology of peptic ulcer, and its medical and surgical management have for generations provoked lively discussion as well as provided wholesome stimulation for experimental and clinical investigations. The criticism of the acid theory has slowly been subdued by the passage of time. The careful research of surgeons and physiologists, notably, Carlson(1), Munn(2), Williamson(2), Matthews(3), L. R. Dragstedt (4), and others have established the acid theory as the most plausible explanation of peptic ulcer formation. The clinical management which provides chiefly for the neutralization of the hydrochloric acid in the stomach has achieved results comparable to those obtained in diseases for which we claim specific antidotes.

The introduction of vagotomy in the treatment of peptic ulcer by L. R. Dragsteadt (5, 6, 7), in 1943 has not escaped the traditional stormy reception witnessed whenever gastric physiology is discussed. Why is it that Walters, (8), and others obtained unsatisfactory results with vagotomy, while Dragstedt(9), Grimson (10), Crile(11), and others present large series with enviably good results? Our own experience with vagotomies has convinced us that vagotomy with a posterior gastrojejunostomy is the best and safest operation for duodenal ulcer. It occurred to us that a better appreciation of the present divergent views on vagotomy could be sought in a review of the salient and acceptable facts dealing with the physiology of gastric secretion.

There is enough evidence to state that gastric secretion in peptic ulcer is more abundant, more continuous, and produces a higher level of hydrochloric acid over longer periods of time, than in normal man.(1). This concept may be plotted as follows:

It is logical to assume that this difference is brought about by the continuous activity of the cephalic phase of gastric secretion motivated through the vagus nerve. The gastric and intestinal phases of secretion and their associated hormonal effects cannot be incriminated for they depend upon the presence of particular food in the stomach on the one hand and the passage of chyme through the intestinal tract on the other. It seems plausible, therefore, that hyperactivity of the vagus nerve in terms of intensity and duration is the real physiological defect responsible for ulcer formation.

The severence of the vagi should, theoretically, effect a cure of peptic ulcer. The results of vagotomy obtained by various surgeons support, in practice, this theoretical deduction. The appreciation of the present day controversy is evident in the study of the total clinical effect of vagotomy on the patient.

The section of the vagus nerves in the lower limits of the esophagus accomplishes the following:

1. abolishes the cephalic phase of gastric secretion,(12)
2. removes the vagal motor influence on the gastric and intestinal musculature, and
3. decreases the secretory tonus of gastric mucosa.(13).

In terms of clinical observations, surgeons have reported the following symptoms as sequelae in vagotomized patients:

*Secretory Changes*:

1. Prompt disappearance of ulcer pain,
2. lowering of gastric juice acidity
3. decrease in total volume of secretion
4. healing of the ulcer

*Motor Changes*:

1. epigastric fullness
2. gastric retention
3. foul regurgitation
4. vomiting
5. diarrhea

The reported series on vagotomy differ greatly in their emphasis on these unpleasant after effects. The results in our own series of thirty-six vagotomized patients correspond with those reported by Dragstedt. Five patients, or 14% complained of post vagal syndromes of one type or another. Two of these five patients returned to normal within three months after survery and were satisfied with the operation. Three patients remained dissatisfied. One was found to have a persistent ulcer in the duodenum

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as well as an intact left vagus nerve. Subtotal gastric resection was performed. Following this the patient lost weight, from 160 to 125 pounds, and became dissatisfied because of inability to gain weight. The second patient, at re-operation, was found to have had a satisfactory vagotomy. A subtotal gastric resection was performed. This patient is still dissatisfied because of dumping syndrome which followed the gastric resection. The third patient had a vagotomy without gastrojejunostomy. After eight months of repeated gastric retention, we re-operated her by performing a simple gastrojejunostomy. This patient returned to normal.

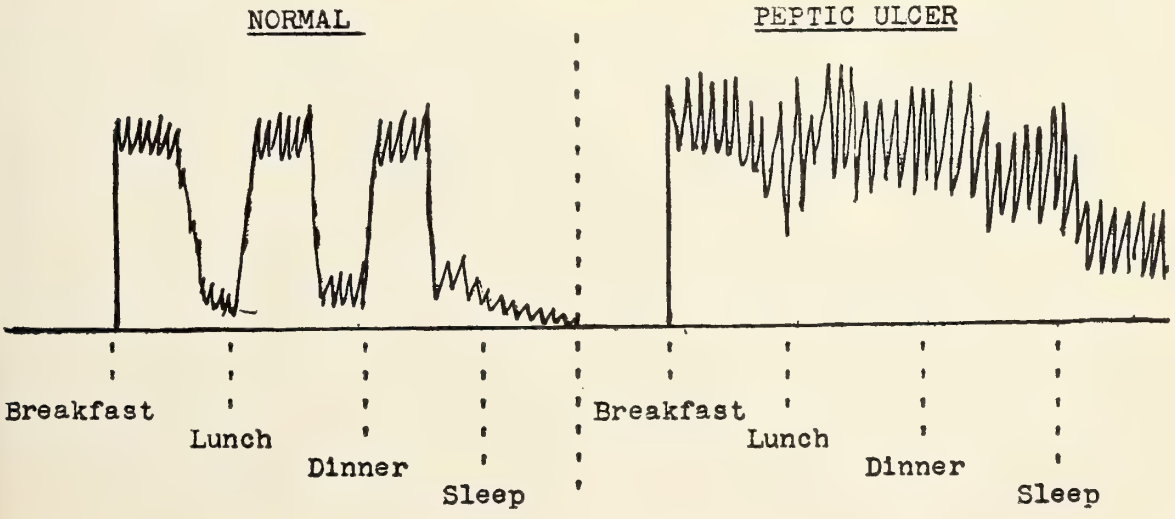
The analysis of the three unsatisfactory results shows that two of these, or 5.6% were errors on our part; one had an incomplete vagotomy, the other should have had a gastrojejunostomy at the time of vagotomy. Only one patient, or 2.8% had lasting, unsatisfactory results. There was no operative mortality, and no ulcer recurrance in six years.

It would be well to subject other surgical operations devised for the treatment of peptic ulcer to physiological tests. The operation of gastrojejunostomy is untenable as a treatment of active peptic ulcer. The physiological disorder responsible for ulcers is not corrected by this operation; in fact the susceptible jejunum placed in a position where it receives the full impact of acid gastric juice is rendered vulnerable to stomal ulcers. Gastrojejunostomy should be reserved for senile, poor-risk patients, whose peptic ulcers are burned out, who have little or no hydrochloric acid and whose major difficulty is duodenal stenosis.

The physiological accomplishment desired in the operation of subtotal gastric resection is the removal of the acid bearing portion of the stomach. Surgeons have learned by experience that at least the lower ¾ of the stomach must be removed in order to produce an achlorhydria sufficient to prevent the formation of stomal or jejunal ulcers. It is certain that the acid secreting cells do not stop in a neat line at the upper quarter of the stomach(14)(15). Subtotal gastric resection leaves a variable amount of parietal cells in the unresected portion of the stomach. This may, in part, be an explanation for the infrequent development of stomal ulcer following subtotal gastrectomy. The success of this operation depends on still another physiological requirement, the removal of the pylorus. This is important because the pylorus exerts a secretory influence upon the parietal cells left in the unresected portion of the stomach. The removal of the pylorus in cases of inflammatory reactions around a duodenal or pyloric ulcer, is not always possible. In this event, at least the pyloric mucosa should be removed in order to abolish the pyloric phase of gastric stimulation.

There is no doubt that sub-total gastrectomy is acceptable as a good operation. Its acceptance must be judged by the good results is gives, rather than by the excellence with which it corrects a known physiological disorder. The removal of the major portion of the stomach and the re-arrangement of the continuity of the flow of vital juices is not without sequelae and complications. Patients with subtotal gastric resection often do not gain weight, and some

THE AVERAGE DAILY SECRETION OF ACID GASTRIC JUICE



develop a chronic low grade nutritional type of anemia. In our series of one hundred consecutive cases, we had 2% mortality; six developed obstruction of the outgoing loop and four suffered with dumping syndrome. Four of the obstructed patients required re-operation; in the remaining two, the obstruction spontaneously released itself. The patients complaining of dumping syndrome suffered periodically for six months to two years. We have had no known ulcer recurrence following subtotal gastrectomy in ten years.

These physiological considerations lead us to the conclusion that vagotomy is an operation particularly suitable for the surgical correction of the existing ulcer disorder. Theoretically, vagotomy should heal any acid ulcer, be it in the stomach or duodenum. It should be unwise to perform a vagotomy on an actively bleeding gastric ulcer from an arteriosclerotic vessel when this ulcer, with its active bleeding, can be removed by subtotal gastrectomy. The benign or malignant nature of a gastric ulcer not definitely established preoperatively, can be diagnosed at operation by biopsy. If it is malignant, a total gastrectomy should be performed. If benign, the surgeon may terminate the operation by a vagotomy and gastrojejunostomy, or by subtotal gastrectomy. All writers agree that vagotomy is indicated in stomal ulcers which develop following subtotal gastric resection.

The operation of vagotomy requires a more skillful and deeper anesthesia than does subtotal gastrectomy. It should never be performed without gastrojejunostomy. Gastric decompression should be carried out for four to six days following vagotomy in order to overcome the immediate loss of motor tone. It may be necessary to aspirate the stomach several times after this initial decompression period.

The choice between vagotomy and subtotal gastrectomy as the standard surgical treatment of peptic ulcer must be made by the individual surgeon. His choice should be based upon the keen appreciation of the nature of peptic ulcer, post-operative complications, sequelae, mortality and the precise evaluation of the results obtained.

REFERENCES

1. Carlson, A. J., The Secretion of Gastric Juice In Health and Disease. Physiol. Rev., 1923, 31.
2. Mann, F. C. and Williamson, C S., The Experimental Production of Peptic Ulcer. Ann. Surg., 1923, 77, 409-422.
3. Matthews, W. B., Dragstedt, L R., Etiology of Gastric and Duodenal Ulcer; Experimental Studies, Surg., Gynec. and Obst. 55:265-286, Sept. 32.
4. Dragstedt, L. R , Some Physiological Principles In Surgery Of the Stomach, Can. Med. Ass'n. J. 1947, 56, 133-137.
5. Dragstedt, L. R., Supradiaphragmatic Section of the Vagus Nerve In the Treatment of Gastric Ulcer, Gastroenterol , 1944, 3, 450.
6. Dragstedt, L. R., Removal Of the Vagus Nerves of the Stomach In Gastroduodenal Ulcer, Surgery, 1945, 17, 742.
7. Dragstedt, L. R., Owens, F. M., Supradiaphragmatic Section of the Vagus Nerves In Treatment of Dudenal Ulcer, Proc Soc. Exper. Biol, and Med. 53:152-154, 1943.
8. Walters, W., Gastric Neurectomy; Anatomic and Physiologic Studies with Favorable and Unfavorable Results in Treatment Of Peptic Ulcer, Arch. Surg. 55:151-163, Aug. '47.
9 Fritz, J. M. and Dragstedt, L. R., Vagotomy, Indications and Results, Mod. Med., Chicago, 1949, 17-69.
10. Grimson, K. S., Present Status of Vagotomy In Treatment of Peptic Ulcer, North Carolina M. J. 8:563-568 Sept. '47.
11 Crile, G. Jr., Technique of Vagotomy and Gastroenterostomy In the Treatment of Duodenal Ulcer, Surg. Gynec. and Obst. Vol. 92, No. 3, March, '51.
12. Pavlov, I. P., The Work of Digestive Glands, treated by W. H Thompson, J. B. Lipincott Co., 1910.
13. Dragstedt, L. R., Personal communication.
14. Berger, Amer. J. Anat., 1934, 54, 87.
15 Harvey, B. C. H. and Bensley, R. R.—Biol. Bull., 1912, 23, 225.

# CARDIAC DISORDERS OF COLLAGEN DISEASES*

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The term "Collagen Diseases" was formulated by Klemperer and his associates to denote a group of medical disorders characterized by generalized changes in the collagen or interstitial material of the body. This concept has been widened recently to include all derivatives of the primitive mesenchyme, the fibroblast, chondroblast, osteoblast, and the reticulum. The products of these cells, the collagen, hyalin, and osteoid, are related chemically and are susceptible to the same influences. The functions of these mesenchymal units are structural, supportive, and defensive. The reticulum and its motile cells, the monocyte, histiocyte, and granulocyte serves in defense by filtering the lymph channels and removing offending particulate materials. In addition, the reticulum produces the circulating antibodies probably through the lymphocyte and plasma cell. There is evidence that collagen, hyalin, and osteoid substances have a defensive action similar to the circulating immune bodies except that it is fixed to the tissue. Stimulation of this defense by antigens, toxins or injuries may produce chemical changes which are revealed in the altered staining reactions called "fibrinoid degeneration." If such reactions are severe, actual collagen necrosis may occur. The necrosis may produce an exudative reaction of the reticulum system with the

1. Presented at The Arizona Rheumatic Society Meeting, May, 1950, Phoenix, Ariz.

appearance of histiocytes, lymphocytes, and plasma cells. Frequently, proliferation of endothlial cells occurs for such severe reactions invariably involve the smaller blood vessels. The great number of factors which may influence the final lesions plus the many still unknown makes our understanding of the disease processes quite inadequate.

There is much current debate over the diseases to be classified as collagen diseases. Usually listed are rheumatic fever, disseminated lupus erythematosis, generalized scleraderma, dermatomyositis, periarteritis nodosa, and rheumatic arthritis. Some would include serum sickness and throbo-angiitis obliterans. We will discuss only the usually accepted group.

Symptomatically there are many similarities, but occasionally only time will differentiate between them. All have intermittanty swolen, painful musces and joints. Fever, weakness, malaise, anorexia, fatigue, weight loss, and anemia appear during the course of these diseases. Vague gastrointestinal, genito-urinary and neurological symptoms are common. Pathologically each disease has characteristic lesions, although frequently lesions in every way similar to those found in other of the collagen diseases. This is the source of confusion in present day literature.

It is not our purpose to discuss the cardiac disorders of rheumatic fever since they are well known. The importance of the heart disease in other collagen diseases is less well known.

## RHEUMATOID ARTHRITIS

Rheumatic fever and rheumatoid arthritis have long been considered two separate diseases. Cases in which rheumatoid arthritic changes have been superimposed on typical rheumatic fever are not uncommon. That the changes typical of rheumatic endocarditis and myocarditis may occur in rheumatoid arthritis is recognized far less frequently. In those series of autopsy studies where the diagnostic criteria of rheumatoid arthritis are exacting, the percentage of cases with rheumatic heart diseases is high; yet the clinical diagnosis is missed in 30 to 50% of the cases. This is explained in part by the marked restriction of activity produced by the joint involvement which allows an embarrassed heart to function adequately under the load. The majority of these patients die of congestive heart failure, but at a later age than one would expect from the cardiac lesions. Murmurs are faint or non-existant. Cardiac enlargement is common in the later stages. X-ray reveals the changes in heart contour consistent with involvement of the various valves. Electrocardiograms reveal any or all of the changes found in rheumatic heart disease including auricular fibrillation and flutter, premature auricular and ventricular beats, prolonged P-R intervals, widened QRS, and all degrees from extreme right to extreme left axis deviation.

A 52 year old white housewife was seen at the office with a history of inflammatory rheumatism at the age of 10. Progressive rheumatoid arthritic changes in the hands appeared at the age of 30. The arthritis rapidly spread to involve all the joints which became markedly deformed. At 38 years of age signs of heart disease appeared with irregularity of rhythm. There was evidence of mitral stenosis and insufficiency. At age of 52 congestive failure was a constant problem. It was then evident that there was an aortic stenosis also present. She died in congestive failure at 53 of rheumatic heart disease with involvement of the aortic and mitral valves.

The pathology found is typical of rheumatic heart disease with thickening of the valve margins, shortened thick chordae tendinea, endocarditis, valvular stenosis, ventribular hypertrophy, etc. Aschoff bodies are rare, although perivascular collections of fibroblasts, lymphocytes and fibrous tissue are common.

It is evident that there is a close relationship between rheumatic fever and rheumatoid arthritis, and are probably manifestations of the same basic disease processes.

## DISSEMINATED LUPUS ERYTHEMATOSIS

Clinical symptoms of heart disease are rare in disseminated lupus erythematosis except when a pericarditis is associated. Tachycardia is common and related to the fever. Systolic murmurs are frequent, but not from valvular disease. Congestive failure may occur rarely, but death is almost always due to other causes. The Chest x-ray may show a normal cardiac contour or mild diffuse enlargement. There are no specific electrocardiographic findings, but changes of nonspecific myocardial damage may be found.

Pathological findings are of a subendothelial, fibrinoid degeneration of the ground substance to produce a verrucous plaque on the endocardium. These are most common on the valves. Throughout the myocardium the collagen tissues

show swelling, rigidity and deep staining with eosin. There is an associated fibroblastic activity with the appearance of lymphocytes and fibroblasts in the homogenous staining material.

An 18 year old white male was seen complaining of multiple hemorrhagic areas in the mouth and over both lower legs and feet for 3 years. He had had painful swollen joints, subcutaneous nodules, and daily low grade temperature up to 102 degrees for 4 months. He had a constant normocytic anemia and leucopenia with counts ranging from 3,300 to 6,100 cells. The urine showed a constant albuminuria with waxy, hyalin, and granular casts, red and white cells. The kidney function was diminished. Later a soft, systolic heart murmur was found, and an erythematous lesion developed across the nose and upper cheeks. His course was steadily down hill despite transfusions and supportive therapy. He died seven months after the onset of the arthritis. At autopsy evidence was found of subsiding pericarditis, verrucous endocarditis on the mitral valve, and thickening of the endothelial membrane. The final diagnosis was disseminated lupus erythematosis.

## DERMATOMYOSITIS

Clinical evidence of myocardial disease is more frequent than commonly realized. The patient has a persistent tachycardia frequently out of proportion to the fever, and may persist during remissions. It may be used as an index of activity of the disease. Dyspnea, edema, pallor, cyanosis, palpitation, and even arrhythmias may appear during the course of the disease. It is difficult, at times, to state just how much of these complaints are cardiac in origin, for the involvement of the respiratory muscles may seriously impair the respiratory system. Congestive failure, especially of the right side, is more common than in other of the collagen diseases. It is responsible for a fair percentage of the deaths from dermatomyositis. The chest x-ray may reveal a heart normal in size and contour or diffusely enlarged. Electrocardiographic abnormalites are non-specific, but indicative of myocardial damage. There may be prolongation of the P-R interval, altered QRS complexes and T waves.

Reports of pathological material are scarce, but suggestive that the same process present in the skeletal musculature may appear in the cardiac musculature. The muscle fibers are swollen and appear fragmented. The sarcolemma shows hyalinization. The cross striations are obscured. Lymphocytes and histiocytes are scattered through the interstitial tissues. With healing, fibrosis and replacement of muscle fibers occurs.

A 45 year old white housewife came in complaining of soreness in the left chest for six months. For 10 years she had had migratory joint pains and muscle soreness. Fever to 102F. degrees had been present eight months. She was emaciated, and a doughy, tender swelling of the cutaneous and muscular tissues of both forearms was present. The heart was enlarged and a Grade I apical systolic murmur was noted. The pulse rate varied between 110 and 125 per minute. A chest x-ray showed moderate cardiac enlargement predominantly of the left ventricle. An electrocardiogram showed changes suggestive of an old posterior myocardial infarct. Biopsy of the left forearm showed focal areas of inflammatory reaction characterized by lymphocytes, leucocytes, and eosinophils. Similar changes were found in the epidermis. Pathological diagnosis: Dermatomyositis. Final anatomical proof of myocardial involvement is not yet available, but the findings are quite compatible.

## SCLERADERMA

This generalized disease with the striking skin manifestations may have a typical course of heart disease. Clinically the patient may show signs of cardiac disease before the skin lesions are apparent. The patient may note precordial soreness, dyspnea, orthopnea and cough. Edema is not uncommon. Palpitation is frequent. The heart is found to be enlarged diffusely, and the beat has a small amplitude. Evidence of congestive failure is frequent and often the cause of death. The electrocardiogram is abnormal showing evidence of non-specific myocardial damage with abnormal auricular and ventricular conduction.

Pathological findings are a grossly enlarged heart showing fibrotic scars of an unusual type. These are a focal overgrowth of connective tissue with fibroblastic proliferation. The collagenous fibers are enlarged and refractile. Blood vessels in the area are not affected and appear normal. The scars appear characteristic to the disease.

PERIARTERITIS NODOSA

Periarteritis nodosa has protean manifestations by the very nature of the tissues affected. The heart is frequently affected and presents symtoms in the majority of cases. Dyspnea, tachycardia, palpitation, orthopnea are common. Substernal pain entirely typical of an acute coronary occlusion may appear. Signs of congestive failure with cough or edema are usual. Death may be sudden from a massive infarction or rupture of an aneurysm on an affected vessel. The heart may or may not be enlarged in the chest x-ray. An electrocardiogram is abnormal when the heart is involved, and may show anything from non-specific myocardial damage to the typical findings of a coronary occlusion.

The pathological findings vary depending on the stage of the disease. In the acute phase the small and medium size arteries show necrosis with a leucoytic infiltration of neutrophils, eosinophils, lymphocytes in the media and adventitia. Later, fibroblastic proliferation with peri-arterial infiltration of lymphocytes and monocytes appears. Thrombi, recent and old, are found with some canalized. Atrophy of the tissue involved is present.

CASE REPORT

A 33 year old white male was seen in the office complaining of severe cramping abdominal pain unrelated to food or any other factor. Following a severe mastoiditis five years previously, he developed a migratory polyarthritis then diagnosed as rheumatic fever. Four months and again two weeks before he was seen he developed a right hemiplegia of a short duration. For four months he had noted painful purpuric lesions over the bony prominences which were slow in healing. On two occasions he had experienced excruciating substernal pain radiating down the left arm associated with dyspnea and drenching perspiration. An electrocardiogram did not show evidence of coronary occlusion. Minor changes were noted which were not diagnostic. Biopsy showed "periarterial inflammatory reaction with marked thickening of the medium sized blood vessels." The patient had a rapid downhill course with increasing renal failure. He died suddenly from an intracranial hemorrhage. The autopsy revealed periarterial inflammatory reactions with proliferations of the intima in many of the organs. The heart was enlarged and showed focal areas of muscular degeneration.

SUMMARY AND CONCLUSIONS:

Evidence has been presented that heart disease is a frequent finding in the collagen diseases. The character of the disturbance depends on the disease. Occasionally the heart symptoms are the only manifestation of the underlying disease. The collagen diseases should be considered in cases of heart disease of uncertain etiology.

# PHOENIX *Clinical* CLUB

## MASSACHUSETTS GENERAL HOSPITAL CASE NO. 36312

**The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.**

A sixty-two-year-old man was admitted to the hospital because of intermittent vomiting.

Four months before entry the patient noted the onset of belching and crampy para-umbilical pain about four hours after a large meal. The pain was slightly more marked on the left than on the right. A short time later he vomited a large amount of yellowish material containing some partially digested food. During the next month and a half he had several similar but less severe attacks, and therefore he consulted his physician. A gastrointestinal series and a Graham test were said to be negative. Since that time at intervals of about eight to ten days he had had attacks usually lasting about three hours and occurring after large evening meals. These attacks were characterized by midabdominal pain, belching and generalized bloating followed by vomiting. The pain occasionally went through to the right side of the back, and symptoms were always relieved by vomiting. At times food taken two or three meals before the attack could be recognized in the vomitus. During the ten days just before admission, at-

tacks had been more frequent, and he had a sensation of gradual "filling up" over a two-day period, followed by abdominal pain and vomiting. The pain was never severe enough to cause him to double up, and there had been no hematemesis or melena although the stools decreased and were somewhat lighter. There had been no fever, chills or jaundice. Although he had lost 10 pounds in weight during the four-month period he had continued to feel well and worked every day. He had been taking tincture of belladonna for two and a half months before entry.

The past history and review of the systems were noncontributory.

Physical examination showed a well developed man who appeared chronically ill but was in no acute distress. The skin and mucous membranes were slightly dry, and the tongue was coated. There were a few small palpable axillary lymph nodes bilaterally. The heart sounds could not be well heard, and the heart seemed to be displaced or obscured by a large dilated stomach. There was slight abdominal distention with what seemed to be a large dilated stomach in the left upper quadrant. This area was tympanitic whereas the rest of the abdomen was relatively dull. There was a suggestion of a cylindrical mass at the left rectus border in the upper abdomen. There was very slight tenderness in the left lower quadrant. Bowel sounds were depressed, and only occasional tinkles were heard.

The temperature was 100.4°F., the pulse 78, and the respirations 20. The blood pressure was normal.

A urine specimen was normal. Examination of the blood revealed a hemoglobin of 13.8 gm., and a white-cell count of 6700. The blood sodium was 142.0 milliequiv., and the potassium 4.7 milliequiv. per liter, the protein 5.9 gm., and the nonprotein nitrogen 25 mg. per 100 cc., and the prothrombin time 20 seconds (Normal 17 seconds). The sedimentation rate was 0.4 mm. per minute. A gastrointestinal series showed a normal esophagus. The stomach, the duodenum and the jejunum up to a point about 2 feet from the ligament of Treitz were grossly dilated with fluid. In this region the lumen of the bowel was narrowed. The bowel distal to the area, which could only be seen by virtue of small amounts of barium, was of normal caliber. No tumor edge could be made out in the obstructed area, but the examination was considered not entirely satisfactory. Anteroposterior films made with the patient in the supine and in the erect positions showed a large amount of barium and fluid retention within the stomach, as well as visualization of the widened jejunal loop. Some barium was also observed in the right half of a nondistended colon. Several calcified lymph nodes were seen to the right of the lower lumbar spine. A roentgenogram of the chest was not done.

Clinically, the patient remained unchanged, and on the third hospital day an operation was performed.

DR. THOMAS W. WOODMAN

The case to be discussed today is a sixty-two year old man having intermittent vomiting noted four months before admission to the hospital. He had pain about the umbilious, a little more pronounced on the left side, and this pain was relieved by vomiting. He had not noted any blood in the vomitus nor had there been any tarry stools. There was marked gastric retention as shown by the fact that he vomitted food he had eaten a couple of days before vomiting and also by the G. I. series. He had not had any fever, chills or jaundice. The x-ray showed a normal esophagus. The stomach, the duodenum and the jejunum up to a point about two feet from the ligament of Treitz was grossly dilated with fluid. In this region the lumen of the bowel was narrowed. The bowel distal to the area, which could be seen only by virtue of small amounts of barium, was of normal caliber. No tumor edge could be made out in the obstructed area, but the examination was considered not entirely satisfactory.

This case seems to be a rather clear-cut intrinsic lesion in the small bowel. The x-ray certainly does not indicate that there is pressure from without although this must be considered. As is commonly true in these clinical club cases, it just seems a little too simple and I'm more than suspicious that things are not exactly as they seem since Palmer Dysart selected the case.

This lesion could well be carcinoma arising from the mucosa which has produced mechanical obstruction. The patient had lost only ten pounds in weight but commonly the first symptoms noted of carcinoma of the small bowel are those due to mechanical obstruction and to intestinal bleeding. I certainly cannot rule out carcinoma of the small bowel but the absence of

bleeding is somewhat against this diagnosis for usually the carcinoma group, because of early mucosal involvement give rise to bleeding rather early in growth. The sarcoma group arising outside the lumen, on the other hand, may be present for a considerable period of time before the mucosa is invaded and ulceration produced. Either of these groups of tumors may occur at any time from infancy to advanced age but the carcinoma group occurs more commonly in the fourth or fifth decades of life while the sarcoma group occur more commonly in the fourth decade. Certainly there is not enough difference in the age of occurrence to make this very helpful in the case being discussed.

The pathology present in this patient could be of a chronic jejunitis. I operated on such a case last winter in which the jejjunum had the appearance more commonly seen in regional ileitis and the x-rays were quite similar to the ones described in the case being discussed today. The exact eliology of such a jejunitis is not known but is sometimes due to parasitic infection and the most common of these is Strongyloides stercoralis. In most of these parasitic infections, however, there is a long history of illness and of weight loss. Then too, they are more common in younger people.

It is difficult for me to discuss anything but lesions of the bowel itself for, from the description given, I do not believe the bowel obstruction is extrinsic in origin. If the lesion was extrinsic this would have been indicated by the x-ray findings and if the mass in some other organ extrinsic to the bowel was of sufficient size to obstruct the lumen of the jejunum at the level of obstruction described, it is my opinion that the mass would have been of sufficient size to be readily palpable for this section of the jejunum can be moved about over a wide distance and only a large mass could obstruct it extrinsically by pressure. An invasive lesion arising outside of the jejunum would have given more symptoms over a much longer period of time than that given in the history of this case.

The small intestine may harbor a variety of benign tumors although these are extremely rare. These lesions include leiomyomas, fibromas, submucous lipomas, lymphangiomas, hemangiomas, polyps and carcinoids. The prevailing symptoms are similar to those of the malignant lesions and the differentiation can only be made by the operating surgeon and the pathologist. In the differential diagnosis, however, we must include deformities and constrictions of the bowel due to adhesions, extrinsic tumors and inflammatory masses, inflammatory processes such as tuberculosis and non-tuberculous ulcers, as well as regional jejunitis and lesions of the mesentery deforming the intestine. It can be very difficult and frequently impossible to differentiate on x-ray between a construction of the bowel with proximal dilatation caused by adhesions, and a constricting malignant tumor producing the same picture. According to the history he had not had previous surgery which might have produced adhesions.

In this case the bowel distal to the constricted area as seen on x-ray could only be made out by virtue of small amounts of barium but it is described as being of normal character. On x-ray, carcinoma of the jejunum generally appears as an irregularly constricting lesion 3 to 6 or 8 cm. in length and lymphosarcomas may be similar. However, it has been emphasized that lymphosarcomas often cause dilatation of the lumen of the bowel and frequently develop to a large size of 10 to 15 cm. before causing severe clinical symptoms. The pebbled or corrugated surface pattern of the mucosa of the bowel as seen by a barium study is quite characteristic of lymphosarcoma and such a picture is not presented in the x-ray description. Many instances of neurogenic sarcoma, fibrosarcoma, and leimyosarcoma of large size have been reported with mild or no obstruction of the intestine, while large carcinomas which do not obstruct the intestine are rare.

The suggestion of a cylindrical mass at the left rectus border in the upper abdomen on examination of this patient, together with the x-ray and other laboratory findings, plus the patient's age, suggest to me that this man had a malignant lesion of the small bowel resulting in obstruction. My first diagnosis is carcinoma, and second, sarcoma of the jejunum.

## DIFFERENTIAL DIAGNOSIS

Dr. S. Peter Sarris*: As the history is recorded in this abstract it appears quite uncomplicated and straightforward. Essentially, it is a history of a sixty-two-year-old man who for four months had symptoms consistent with recurrent high intestinal obstruction. This was further confirmed by the physical examination and the x-ray findings. Furthermore it is fortunate that

*Clinical associate in surgery, Massachusetts General Hospital.

there was no complicating disease in any of the other systems or any significant past history. In fact the history is so typical of obstructing jejunal neoplasm that one hesitates to make the diagnosis, especially at one of these meetings.

Let me go over the history to see if I can emphasize any pertinent evidence of a positive or negative valve. The vomitus was very characteristic and very helpful in the diagnosis. It contained undigested food and later food eaten two or three meals before; furthermore, from its color it contained bile, which would place the obstruction distal to the pylorus. The fact that the crampy pains were relieved so easily and promptly by vomiting and that this relief lasted some time would also place the point of the obstruction high in the jejunum. The pains with low intestinal obstruction lower ileum or large bowel—seldom improve or disappear after vomiting. They may improve silghtly, but this relief only lasts a short time. The belching that was mentioned prominently in the history is also helpful in the diagnosis of a high intestinal obstruction. There was a negative gastrointestinal series and a negative Graham test done earlier presumably in another hospital from the statement, "said to be negative." I do not know whether that included a barium-enema examination or just an upper gastrointestinal series and, what is more important, whether it included a motor meal or only a study of the stomach and esophagus. Small bowel lesions are notoriously missed if the roentgenologist is not instructed specifically to look for them. The pain going up into the back may be significant in indicating involvement of the mesentery of the bowel. The fact that the stools were smaller and lighter is completely obstructing the upper small bowel and preventing food and gastrointestinal juices, particularly bile, from going through.

On physical examination the general appearance was consistent with a slowly progressing obstruction, as was the distention. There was the suggestion of a mass on the left side; I do not know whether that means that there was no mass, just some spasm of the rectus muscle or an elusive mass. Often, before tumor of the small bowel becomes fixed, palpation pushes the tumor among other loops of small bowel, and thus it is made to disappear. The smal palpable axillary lumph nodes may be significant. They might be tied up with a lymphoma of the small bowel.

The laboratory data were not significant. There was no leukocytosis, and there was no mention of any stool examination for blood. There are certain questions that I should like to ask the radiologist. Was the mucosa ulcerated or not? Was there evidence of extrinsic or intrinsic narrowing? Was the barium in the right half of the colon found at the same examination as the gastrointestinal series? If it was on the same day, it would suggest a fistula between the small bowel and colon.

Dr. Stanley M. Wyman: As Dr. Sarris has suggested, these films were not all done on the same day. Some films were taken at the time of fluoroscopic examination, and others on the following day. I might say that this is the wrong way to examine this kind of patient. An upper gastrointestinal examination should never be done in any case of small-bowel obstruction. The patient should be intubated and then after he has been cleaned out, a good examination can be made by introducing barium into the tube in the small bowel. This film shows fluid levels in the duodenal loop with barium trickling past the ligament of Treitz into the much-distended jejunum. The obstruction lies somewhere in this neighborhood; it cannot be adequately seen on any film. A very small amount of barium is seen to have trickled past this obstruction. These two spot films of the distal loop of jejunum, as far as I can see, fail to demonstrate the mucosa in the narrowed bowel, and I can only assume that there is a narrowed segment there. I cannot make any statement about how the barium got into the right colon in these films taken twenty-four hours later. There is nothing to suggest fistula.

Dr. Sarris: How far into the colon can you see barium?

Dr. Wyman: Up to the left transverse and possibly the descending colon.

Dr. Sarris: Could there be a fistula there?

Dr. Wyman: I do not believe so. The barium has mostly concentrated in the cecum and is strung out from there into the region of the splenic fixure. The point of obstruction may be in the center of this loop.

Dr. Sarris: Can you make a statement whether the narrowed area is a point narrowing, or does it extend a few centimeters?

Dr. Wyman: I cannot even see the narrowing. I can simply assume it is there. That is why I say this is an inadequate examination.

Dr. Sarris: At least it is helpful in making a diagnosis of a high jejunal obstruction.

What lesions in the upper jejunum produce an obstruction like this? Inflammatory reactions, either nonspecific or granulomatous, such as regional enteritis, can occur in the jejunum and can produce isolated lesions, but more commonly they produce multiple lesions. Of course, this could represent the upper lesion of a group of lesions in the small bowel. However, I cannot make that diagnosis. The recurrent bouts of obstruction due to regional enteritis last for days—that is, the inflammation does not subside very suddenly following vomiting. There may be an episode of abdominal pain and vomiting that lasts for a few days and then improvement as the inflammation subsides. Calcified lymph nodes were mentioned, which can indicate tuberculosis, but I think this type of lesion produced by tuberculosis would be extremely rare and there was no evidence of tuberculosis elsewhere. Certainly, calcified lymph nodes like those in the abdomen are very common so that we need not pay too much attention to them.

Adhesions, which can occur without previous operation, are a common cause of intestinal obstruction. This could perfectly well be an attack of jejunal obstruction produced by an adhesion. However, from the history I think I can exclude adhesions. Frequently, in intestinal obstruction from adhesions there is a preceding episode or two of intestinal obstruction but not an acute attack every few days.

Gallstone ileus has become increasingly common. Two things against that, I think, were the negative Graham test and, more important, the fact that gallstone ileus is usually in the lower third of the ileum—not so high in the jejunum. I cannot see any gas in the biliary tree in the x-ray films, and none was reported. Then, too, the four-month history was a little long for gallstone ileus.

Could this stenotic area have been the result of a recurrent volvulus or a recurrent inteussusception? Volculus often recurs. The frequency of attacks and the fact that the obstruction was in the jejunum—the great majority of cases of volvulus are in the ileum and not high in the jejunum—were points against volvulus. In any large series of cases of small-bowel obstructon, there are a few cases in which one finds that there is a stenosis of the small bowel that is not explained pathologically. The stenosis could have resulted from localized mesenteric thrombosis in which the infarction was not sufficient to produce gangrene and perforation but in which there was sufficient ischemia to be followed later by stenosis. The stenotic areas may have been due to an old inflammation, but I cannot make that diagnosis without any preceding episode. I am not going to try to make a diagnosis of stenosis of the small bowel that a pathologist cannot explain.

The most likely condition is a tumor of the small bowel. The commonest tumor obstructing the small bowel is metastatic carcinoma. Even though one excludes cases of metastatic carcinoma in which the primary lesion is obvious, obstruction of the small bowel by metastatic carcinoma is more common than a primary tumor of the small bowel. However, in the absence of any primary lesion I certainly cannot make the diagnosis. At one of the previous conferences when I discussed a small-bowel case, the intestinal obstruction proved to be due to a metastatic carcinoma from the ball bladder. Here there was a negative Graham test. The stomach is a common site. I dare say that in a stomach with so much fluid and so much distention the radiologist might miss a carcinoma. Is that true?

Dr. Wyman: Positively.

Dr. Sarris: Then there might have been a carcinoma of the stomach with a metastatic lesion producing the obstruction in the jejunum. Any other part of the gastrointestinal tract could have been the primary site or even some organ outside the abdomen. In the absence of any hint of a primary lesion somewhere I am going to stick to a primary tumor of the small bowel. What types do we have? The so-called carcinoids constitute roughly a fifth of all the tumors of the small bowel and, as contrasted to the carcinoids of the appendix, often metastasize. However carcinoids are almost always in the ileum. There are very few described in the jejunum. Then there are the sarcomas, including the neurogenic sarcomas, leiomyosarcomas and the lymphosarcomas. I wonder whether the lymph nodes in the axillary area were meant to be significant. There are two points against a sarcoma. Sarcomas increase in incidence as one goes down the gastrointestinal tract. They are more common in the ileum than they are in the jejunum, as against carcinoma, which is more common in the jejunum than in the ileum; sar-

comas produce complete obstruction less frequently than carcinomas do. These differences are very small but have to be utilized if I am going to narrow down the diagnosis.

Carcinoma of the small bowel presents itself as a rule in three clinical types: The anemic, the obstructive and the perforative. The patient with the anemic type may have been treated for some time for idiopathic anemia; the obstructive type can produce a clinical picture like this; and the last type can perforate, producing generalized peritonitis, a large abscess or a fistula into another part of the gastrointestinal tract. Of course, many cases dovetail and demonstrate all three features. The case under discussion seemed to fall, if it was such a case, into the obstructive type, with only a slight anemia. Pathologically, the above classification corresponds to three types of lesions, the stenosing type, the polypoid type, with a fair amount of bleeding and a tendency to intussuscept, and the ulcerative type, with massive gastrointestinal bleeding and frequent perforation.

I think I shall make a diagnosis of high jejunal obstruction, which I will guess that this was a primary carcinoma of the jejunum. My second choice would be a sarcoma, and my third a metastatic lesion. Because of the amount of barium in the colon the possibility of a fistula should also be kept in mind.

Dr. Perry J. Culver: The x-ray films that were taken outside were done in the office of the patient's physician, who looked for an ulcer. That is what the diagnosis was. Those x-ray films were carried out just through the duodenum. The duodenum was not dilated at that time, two months before admission.

Dr. Sarris: I think that is very important, for early in high small-bowel obstruction, the dilatation of the proximal jejunum is often only transient. If the patient had recently been cleaned out, the upper gastrointestinal tract might perfectly well appear normal in the x-ray film.

Dr. Gordon A. Donaldson: My introduction to this patient was via these x-ray films. With the presence of a mass in the upper abdomen. It was obvious that something would have to be done surgically. However, we did take a few minutes to try to make a preoperative diagnosis. We were disappointed that there were no scars present on the abdomen because we thought this should have been the source of the obstruction—namely, a postoperative adhesion, which is by far the most common cause of obstruction of the small bowel. The calcified lymph node caught our eye, and we thought there might be an adhesion to it, causing the obstruction. This seemed likely in view of the X-ray Department's definite report that there was no shelf-formation or narrow area in the bowel. Of course, we considered carcinoma, rare as it is, although we were reluctant to make that diagnosis. The Mayo Clinic* has reported a group of 44 cases of primary carcinoma of the jejunum over a forty year-period.

## CLINICAL DIAGNOSIS

Jejunal obstruction caused by adhesive band;? primary carcinoma.

## DR. SARRIS'S DIAGNOSIS

Carcinoma of jejunum, with obstruction? Sarcoma? Metastatic tumor.

## ANATOMICAL DIAGNOSIS

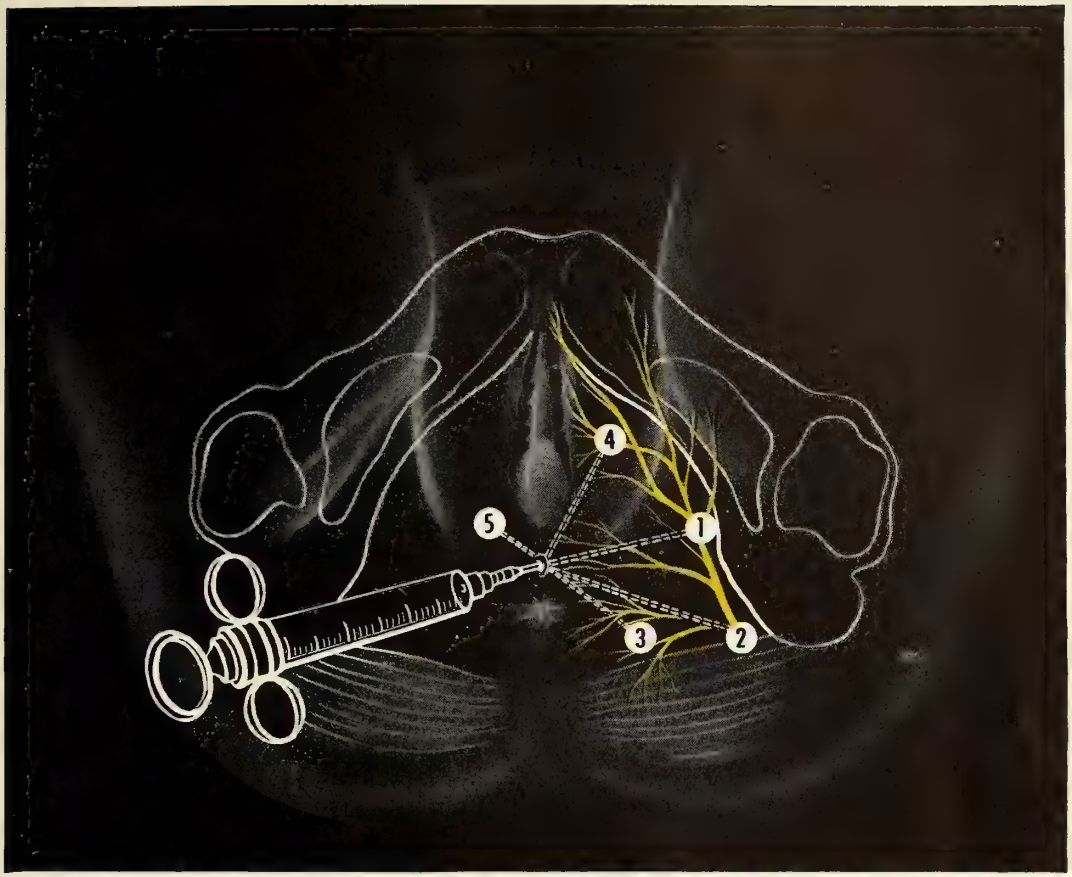
Adenocarcinoma of jejunum, with metastases to regional lymph nodes.

## PATHOLOGICAL DISCUSSION

Dr. Donaldson: At operation the upper jejunum was greatly distended behind a large nodule in the mesentery of the bowel about 18 inches beyond the ligament of Treitz. The irregular mass was nearly as large as a golf ball. The jejunal mesentery was greatly foreshortened by it, and in the jejunal wall itself was an annular tumor.

Dr. Benjamin Castleman: The tumor was a completely annular adeno-carcinoma, which had extended through the wall of the bowel to form a mesenteric mass. In addition several of the regional lymph nodes were involved. It was a highly malignant adenocarcinoma.

*Pridgen, J. E., Mayo, C. W., and Dockerty, M. B. Carcinoma of jejunum and ileum exclusive of carcinoid tumors Surg., Gynec. & Obst. 90:513-524, 1950.




Sites for injection of local anesthesia in obstetrics. Sites 1 to 4 should be similarly injected on the contralateral side. Site 5 is for episiotomy. Adapted from Johnson, O. J.: Nerve Block in Painless Childbirth, J.A.M.A. *145*:401 (Feb. 10) 1951.

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[1]Heins, H. C.: Pudendal Block with Hyaluronidase, J. South Carolina M. A. *46*:309 (Oct.) 1950.
[2]Baum, F. E.: The Use of Hyaluronidase in Pudendal Block, Am. J. Obst. & Gynec. *60*:1356 (Dec.) 1950.

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RESEARCH IN THE SERVICE OF MEDICINE **SEARLE**

# THE Secretary's MESSAGE

## 1952 Campaign American Medical Education Foundation

"THOUGH MUCH WAS DONE IN '51—THERE'S MORE TO DO IN '52"—. WITH THESE WORDS, DR. ELMER L. HENDERSON, LOUISVILLE, KENTUCKY, PRESIDENT OF THE AMERICAN MEDICAL EDUCATION FOUNDATION SOUNDED THE CALL TO ACTION FOR THE FOUNDATION'S 1952 DRIVE FOR FUNDS.

SPEAKING TO PHYSICIAN LEADERS IN MEDICAL PHILANTHROPHY FROM 48 STATES, GATHERED AT CHICAGO SHERATON HOTEL FOR A FEBRUARY 17TH "KICK-OFF" CONFERENCE, DR. HENDERSON STATED THAT THE YEAR 1952 WILL BE ONE FILLED WITH MANY DECISIONS, NONE OF WHICH WILL BE MORE IMPORTANT THAN THAT OF GIVING ADDED FINANCIAL SUPPORT TO OUR MEDICAL SCHOOLS.

THE PROGRESS OF PHILANTHROPIC GIVING THROUGH THE YEARS WAS OUTLINED FOR THE REPRESENTATIVES BY JAMES E. ALMOND, DIRECTOR OF THE AMERICAN CITY BUREAU, CHICAGO, ONE OF THE LARGEST FUND RAISING AGENCIES IN THE UNITED STATES. MR. ALMOND DREW UPON HIS VAST EXPERIENCE IN RAISING MONEY FOR CULTURAL AND EDUCATIONAL INSTITUTIONS AS HE TOLD OF THE PROBLEMS AND TECHNIQUES INHERENT IN THE VOLUNTARY SUBSCRIPTION OF FUNDS.

THE ONE DAY CONFERENCE OF STATE LEADERS WAS HELD FOR THE PURPOSE OF STIMULATING ACTION BY THE INDIVIDUAL STATES FOR THE CURRENT DRIVE WHICH WILL BE CONDUCTED BETWEEN APRIL 1 AND JUNE 30 OF THIS YEAR. THE VARIOUS SPEAKERS POINTED OUT TECHNIQUES IN PHILANTHROPIC FUND RAISING WHICH PROVED SUCCESSFUL DURING 1951 AND EXPLAINED NEWER DEVELOPMENTS WHICH CAN BE UTILIZED THIS YEAR.

A MAJOR CHANGE IN FOUNDATION POLICY FOR 1952 WAS OUTLINED FOR THE GROUP. THIS CHANGE AS VOTED BY THE DIRECTORS AT THEIR MEETING LAST DECEMBER CONCERNS THE METHOD OF DISTRIBUTION FOR THE AMEF MONEYS.

IN 1952 GIFTS WHICH HAVE BEEN DESIGNATED FOR A SPECIFIC MEDICAL SCHOOL WILL BE ADDED TO THAT SCHOOL'S BASIC GRANT FROM UNEARMARKED FUNDS. IN 1951 ALL EARMARKED GIFTS WENT TO THE SCHOOLS FOR WHICH THEY WERE DESIGNATED BUT WERE INCLUDED WITH UNEARMARKED FUNDS IN COMPUTING THE BASIC GRANTS. UNDER THE NEW POLICY IF MEDICAL SCHOOL A'S SHARE OF THE UNEARMARKED FUNDS IS $20,000 AND EARMARKED FUNDS TOTALING $5,000 HAVE BEEN RECEIVED FOR MEDICAL SCHOOL A, THE SCHOOL WILL RECEIVE A TOTAL GRANT OF $25,000.

IN EXPLAINING THE APRIL TO JUNE DATES FOR THE DRIVE, DR. DONALD G. ANDERSON, SECRETARY, TREASURER OF THE FOUNDATION POINTED OUT THAT THE MAJORITY OF STATE MEDICAL SOCIETIES ARE HOLDING THEIR ANNUAL MEETING PRIOR TO JUNE 30, 1952, THEREBY ENABLING THESE SOCIETIES TO IMPLEMENT, INTENSIFY OR CLIMAX THEIR EFFORTS AT THEIR ANNUAL MEETING. THE FOUNDATION DIRECTORS ALSO FELT THAT THE RESULTS OF A CONCENTRATED CAMPAIGN, SUCH AS THOSE CONDUCTED BY COMMUNITY CHEST, RED FEATHER, ETC., COULD BRING MAXIMUM RESULTS BY MID-YEAR, THUS LEAVING THE REST OF 1952 FOR WORK IN AREAS WHERE CONTRIBUTIONS LAGGED.

HARRY E. THOMPSON, M.D. OF TUCSON REPRESENTED THIS ASSOCIATION AT THE CHICAGO MEETING.

# Editorial

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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.

2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. (See MEDICAL WRITING by Morris Fishbein.)

3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.

4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.

5. Submit manuscript typewritten and double-spaced.

6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.

The Editor is always ready, willing, and happy to help in any way possible.

## NEWEST DRUG FOR TUBERCULOSIS

A footnote should be added to the two recent editorial summaries of the treatment of tuberculosis.

A new drug which has great promise against tuberculosis has been widely and prematurely proclaimed. The fundamental drug is *isonicotinic acid hydrazide.* It was being carefully studied for its effects on cultures, animals, and humans when two New York newspapers broke the story. This possibly happened by the bribery of a laboratory worker, but it is hard to see how the news could have been kept. People have become too alert and expectant to wait for conservative science.

News conferences were immediately called by the National Tuberculosis Association, in conjunction with the research director of Hoffmann-La Roche and the E. R. Squibb and Sons companies, and the physicians who had been in charge of the investigation.

It was decided to give out the information available in mid-February, plus warnings which would emphasize the limited data and the possible place of the drug as a part of therapy.

The immediate result was a rash of news stories, and some very good summaries by columnists. Time Magazine hit the jackpot in a few days, as did Life Magazine. The Saturday Evening Post, the American Review of Tuberculosis, and the Quarterly Bulletin of the Sea View Hospital were scheduled for articles in April publication, but the last-named journal has been allowed to slip out ahead.

*Isonicotinic acid hydrazide* is known by two trade names for identical preparations, discovered separately. They are 'Rimifon' by Hoffmann-La Roche, and 'Nydrazid' by E. R. Squibb and Sons. Dr. Tucker of the Veterans Administration has suggested that the initials 'INH' be used to label for the drug. It might be mentioned that the recognition of the similarity of the drugs was followed by a quick and ethical cooperation of the highest order by Dr. Elmer Sevringhaus of Hoffman-La Roche, and Dr. Walsh McDermott and Dr. Geoffrey Rake of Squibb.

The American Trudeau Society has taken the lead in analyzing and warning. An executive council meeting was held at once, with the presence of all the people mentioned, plus Dr. Edward Robitzek of Sea View Hospital, Drs. McDermott and Muschenheim of Cornell-New York Hospital, and Mr. William Steenken Jr. of the Trudeau Laboratory, Saranac Lake.

We have collected information from numerous

sources, as of March 20th, and it can be summarized as follows,—

1. Isonicotinic acid hydrazide (INH) is remarkably effective against the tubercle bacillus in culture.

2. Bacterial resistance has not yet been encountered, tho subculturing has exceeded the number of cultures needed to produce resistance to streptomycin by five times.

3. INH is remarkably protective and curative for tuberculous infection in animals, even when inoculated intra-cerebrally.

4. The drug is suppressive, or bacteriostatic, *not* bacteriocidal, as stated in some news releases.

5. It is almost non-toxic, in therapeutic doses, in the animal and human studies so far. A third drug, 'Marsalid' of Hoffmann-La Roche, is moderately toxic).

6. INH is given orally, in pill form. It is said to be simple to manufacture, should cost about 50 to 70 cents a day when available, and could cost much less in a few more months. The companies will be able to produce enough for 100,000 cases in a few months, and easily triple that amount as needed.

7. The drug is non-patentable, but the basic material is indigenous to the United States. The base is said to be a component of jet fuel.

8. The ideal dose is not yet certain, but it may lie between 2 and 8 milligrams per kilo of body weight per day, or 150 to 400 mg. per day per patient.

9. INH is a cousin of nicotinic acid, and has some of the vitamin's effects. It is said to benefit patients with a nutritional deficiency, and to improve the appetite and general feeling.

10. The distribution of INH in the body fluids is generalized, and it passes thru into the spinal fluid in high concentration. A good portion of the drug is excreted in the urine.

11. Symptoms and fever have been reduced in some, but not all, of the patients who have been treated. It has been about as effective as SM and PAS in humans. (The patients shown dancing in the hall would not have been in bed anyway, and many of them actually had large cavities).

12. X-ray and sputum studies are too incomplete to be of much value. The cases chosen were usually far advanced or non-pulmonary. The longest series was started only in September 1951.

13. The Veterans Administration has started a controlled clinical experiment in a couple of dozen hospitals on February 15th, 1952. Rimifon is used in one of four research protocols (another of which is aldinamide). The dose is to be 150 mg. per day for 120 days.

14. The American Medical Association was notified of progress from the first. The Food and Drug Administration must pass on the evidence before the drug can be released for non-experimental use. This could occur by May or June if no unforseen hazard appears.

The obvious warnings should include those against overoptimism, the possibility of resistance (which can occur from any suppressive drug), and toxicity for certain individuals, which occurs with every drug.

Available therapy should not be deferred when the need is obvious. Surgery for destroyed lung tissue should not be put off. Case-finding should be pursued with even greater diligence.

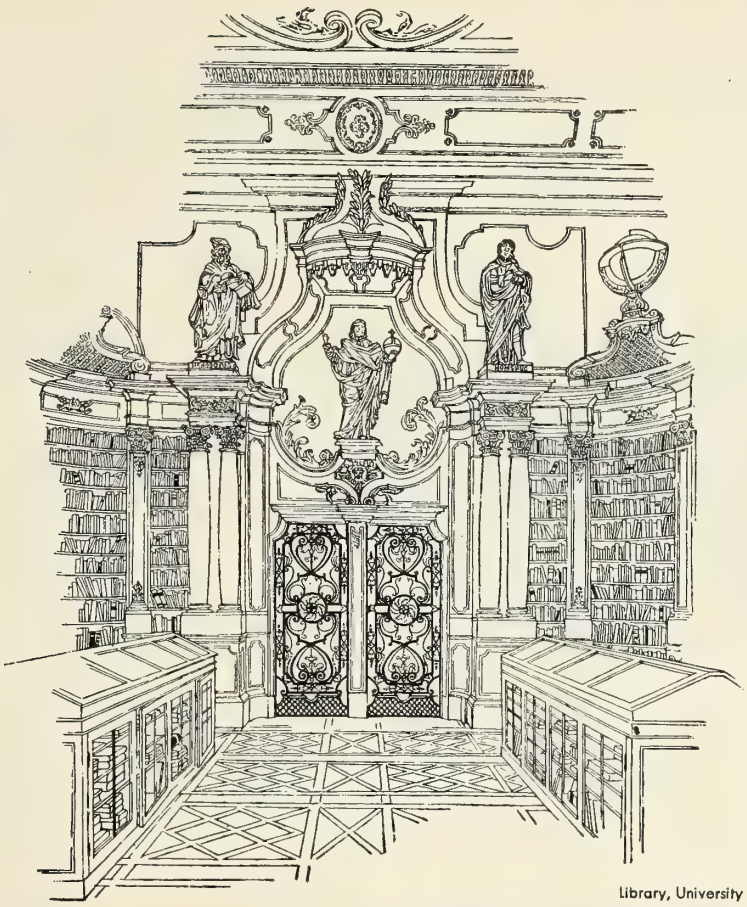
The best educated guess is that INH, or another of its cousins, will find a prominent place in treatment of tuberculosis. It could be a strong factor in prophylaxis. It could change the emphasis on each of the methods used in anti-tuberculosis work. It would be reckless to predict anything beyond that with the evidence at hand.

# TOPICS OF *Current Medical* INTEREST

## RX, DX, AND DOCTORS

By GUILLERMO OSLER, M. D.

The entity of 'MILROY'S DISEASE' does not mean 'a compulsion to edit a better medical journal', and it was not named after our boss Dr. Frank Milroy. . . . It is otherwise known as HYPOGAMMAGLOBULINEMIA, a very rare condition in which the patient has a low total protein and an almost complete absence of gamma globulin. Edema is the only symptom. . . . One



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---

Drs. Harris and Shure have reported their 'EVALUATION OF A NEW METHOD OF DUST CONTROL' in California Medicine. . . . Dust in Arizona is of a different quality, in general, from the predominantly protein substances which make up house-dust elsewhere, but the idea can be mentioned. . . . They have dustproofed the homes of 6 patients, using a spray of an emulsion of white mineral oil in water. The emulsifying agent was Triton NE. . . . Dust sampling showed excellent results, as did the clinical picture, in five. One experiment was ruined when a site adjacent to the house was torn up for building.

---

**When the drug houses run out of PLUGS FOR A PRODUCT they cast far afield, even unto foreign shores, for small tencase reports. Here is one about Vitamin B12, for treatment of herpes zoster, from France. Here is one about B12, for migraine, from Norway. . . . We have seen, incidentally, five methods of THERAPY FOR MIGRAINE reported in the past two months, including vitamins B12 and A, gonadal hormones, psychotherapy, and a new ergotamine drug.**

---

The 'SOLITARY PULMONARY NODULE' is important. If you don't think so you should see the numbers which turn up in mass x-ray surveys, sit in on a public health or staff surgical conference, or try to decide the status of a single case. . . . Most of the cases are symptomatic. Most of the lesions are small, and most could be half a dozen entities. Actually 25 to 55 per cent are malignant. . . . If the nodule cannot be proved nonmalignant, it should be treated as malignant, by resection. . . . History, sputum and gastric studies, skin-tests, Bucky films for calcification, sectional films, bronchoscopy, broncho-graphy, pneumothorax, angiography, general physical examinations are all helpful. . . . All time-consuming and too-expensive studies may be excluded if a few basic steps are not helpful. Exploratory thoracotomy is the next step.

**FLUORIDATION of water supplies has been given the accolate of safety by the A.M.A. Council of Pharmacy and Chemistry, and the Council of Foods and Nutrition. . . . The history and principles of fluoridation are as described in an editorial in ARIZONA MEDICINE many months ago, and the usage has increased as predicted.**

A recent article by Barfield, Harrod, and Goldblatt in the AM. J. of OB. and GYN. brings up two interesting items. . . . Methyl testosterone is the best of three ANDROGENS when given by the currently fashionable transmucosal, or sublingual, method. . . . Sixty-three patients had various 'GYNECIC' disorders. Do you know 'gynecic'? It is an interesting contraction of the clumsy, elongated word 'gynecologic', and maybe a way to shorten quite a few other medical terms. We can shorten 'pathologic' to 'pathic', but could we learn to use 'uric', 'physic', or 'bi-ic'?

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**The SUBLINGUAL ROUTE has also been used, with apparent success by Joseph Litwins, for the administrations of HEPARIN. . . . The cost and discomfort and travail of other means of giving heparin are well known. The new usage produces absorption of heparin from a wafer in 10 minutes, production of therapeutic levels in half an hour, and usual maintenance for four hours. . . . The method bears study.**

---

Three times in the past three years the National Tuberculosis Association has borrowed an article from ARIZONA MEDICINE to abstract and send out to non-specialist physicians in the U.S. . . . An article from the July 1951 issue, "Delays in the Diagnosis of Tuberculosis from Incautious Use of Antibiotics" by W. H. Oatway Jr. (an associate editor of A.M.), will be put out to the 70,000 addresses in May.

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**ANTIBIOTICS.—The mortality in APPENDICEAL PERITONITIS has been reduced from 30 per cent to zero in patients over 12 years of age in a series at the Los Angeles County Hospital. The routine consists of massive doses of antibiotics before operation, with terramycin being slightly the best. It is given I.V., as is aureomycin, and penicillin and streptomycin are given I.M. . . . After surgery, selection of the antibiotic should depend on sensitivity test on the organisms which have been obtained.**

**Dr. R. O. Egeberg reports encouraging results in several cases of DISSEMINATED COCCIDIOIDOMYCOSIS after use of prodigiosin.**

**BACITRACIN has been found to be without local irritative effect in 300 cases with eye infections.**

**TRICHOMONAS infection in the male is recognized with increasing frequency. It has been stubbornly resistant to therapy. A recent small series of 11 cases has been treated with oral aureomycin with notable success and only 2 recurrences.**

The importance of PULMONARY FUNCTION is emphasized by the fact that the New England branch of the American Trudeau Society chose it as the topic for its March 1952 postgraduate course. . . . It was said to be a 'beginner's course', but it is fairly advanced stuff and the technique has proceeded about 30 years beyond the old vital

50 dollars, American money.
capacity test. The fee was fairly modern too, at

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**Dr. W. Wayne Babcock of Temple University, Philadelphia, writes on the usefulness of STEEL CLOTHS IN SURGERY. . . . The usage is different from what one might expect, and far broader than most would imagine. The material is stainless steel, in a form as soft and pliable as a silk handkerchief. . . . He describes its qualities and grades. He also describes actual and potential uses for it in physical repairs, including eyelids, ears, facial bone defects, the chest wall, aneurysmal sacs, the larynx, hernias, prolapses, flail wrists, joint stabilizations, etc. . . . Amazing versatility.**

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Dr. Louis T. Regan's useful summaries of the various sections of Forensic Medicine have continued with an article on 'THE LAW OF ABORTION' in the Annals of Western Medicine and Surgery. . . . As usual he presents the law, state by state. Arizona law is average, and conforms to 5 other states and Hawaii in the wording of the law which calls abortion a crime except that which 'is necessary to save the life of the woman.'

**The 'PUBLIC HEALTH REPORTS' moves into a new, larger format with Number 1 of Volume 67. It looks very well, with original articles, reporting, and abstracts. . . . Two items of special interest are noted: Dr. Paul Lembcke of Johns Hopkins says that antibiotics, not surgery, are the cause of new cuts in appendicitis mortality. Dr. Hollis Ingraham of New York reports that fluoridation does cut dental caries 60 to 70 per cent. Also, 63 communities in Wisconsin are now fluoridating their water supplies. . . . The journal is not entirely free from propaganda.**

---

The combination of ESTROGEN AND ANDROGEN for menopausal symptoms is now the mode. It has certain advantages, as shown by Greenblatt and his colleagues. . . . Hot flashes and associated symptoms were relieved in 90 per cent of the cases, tho not as often as by estrogen alone. Nausea is rare (4 per cent) compared with that of the estrogen (30 per cent), Uterine bleeding is nearly the same (30 versus 34 per cent). Libido is increased twice as often with both drugs (24 vs. 12 per cent). The acne, hoarseness, and hirsutism, which does not occur with estrogen

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alone, is as frequent with combined therapy (12-13 per cent) as with androgen alone.

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**Few reports have exceeded 'THE BIG PICTURE', in lucidity and drama. It is the summary and analysis of the huge 1950 Los Angeles County Chest X-Ray Survey. (The total of films was 1,755,001). . . . The story tells how it was started, how it was managed, what the results were, and then coldly suggests the flaws which should be corrected in any similar future attempt.**

## HILL-BURTON GRANTS STATE OF ARIZONA

The American Medical Association, Washington Office advises that the Division of Hospital Facilities, FSA, reports that as of January 31, 1952, one new project has been approved for Hill-Burton grants in the State of Arizona, as follows:

*Casa Grande Valley Hospital in Casa Grande* —under construction (new general hospital)— total cost $258,460, federal contribution $23,230.

Status of all Hill-Burton hospital construction in this state is as follows:

COMPLETED AND IN OPERATION: 5 projects at a total cost of $2,540,593, including federal contribution of $732,562 and supplying 195 additional beds.

UNDER CONSTRUCTION: 4 projects at a total cost of $6,886,549, including federal contribution of $1,923,230 and designed to supply 426 additional beds.

## $27.5 MILLION SPENT IN FIRST YEAR OF PERMANENT-TOTAL DISABILITY AID PROGRAM

A survey of the first year's operations of the new U. S. program for aid to *totally and permanently disabled needy adults* shows $27.5 million distributed to 28 states, the District of Columbia, Hawaii, Puerto Rico and the Virgin Islands. The program was designed to extend federal assistance to permanently and totally disabled persons between the age of 18 and 65. *Under* 18 they would be eligible for aid as children, *over* 65 as old age assistance cases. The formula provides for federal payment of three-fourths of the first $20 monthly, and one half the balance up to a maximum of $50. Social Security Administration said the new program was "an important factor in reducing the cost of state and locally financed general assistance programs." Emphasis on medical check-ups in the new program, the agency added, "has resulted in many persons learning for the first time that treatment which would remedy or alleviate their condition was available. Some eventual savings in federal and state funds may result from the rehabilitation of these people.

Note: AMA Washington Office Report, January 15, 1952.

## AMA DUES CLARIFICATION

A member, dropped for nonpayment of membership dues and who wishes to have his membership reinstated, would owe membership dues for the year in which he became delinquent and the year in which his membership was reinstated, but he does NOT have to pay membership dues for the intervening years.

Here is an example: Dr. Blank was dropped in 1951 for nonpayment of 1950 membership dues. He applies for reinstatement of his A.M.A. membership in 1952. To bring about this reinstatement, he would be required to pay his 1950 membership dues and membership dues for 1952. Membership dues for 1951 would NOT be required.

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## FORTY-EIGHTH ANNUAL CONGRESS ON MEDICAL EDUCATION AND LICENSURE

An excellent program, covering many problems in connection with medical education, drew nearly 500 educators, state board officials and members of advisory boards in medical specialties to the 48th annual Congress on Medical Education and Licensure in Chicago's Palmer House the week beginning Feb. 10.

A.M.A. President John W. Cline announced a new plan which promises to be a substantial source of private funds for medical education, warning medical schools at the same time not to become "perpetually dependent on Washington handouts."

He said the A.M.A. Board of Trustees had approved in principle a plan whereby the A.M.A. as a corporation, would accept patients for medical discoveries made by member physicians. All royalties, he said, would be turned over to the American Medical Education Foundation for distribution to medical schools.

"The A.M.A. has appointed a committee to study the technicalities involved," he said, adding: "Provided no legal barrier is encountered, the proposed plan shortly will become a reality."

An increase in medical school enrollment of students from small towns probably would result in a larger supply of doctors in such areas, Dr. H. G. Weiskotten said in addressing the congress. He is chairman of the A.M.A. Council on Medical Education and Hospitals, which sponsored the congress. A recent study of the present location of physicians who graduated from medical schools in 1930, 1935 and 1940 showed that residence before admission to a medical college is, in general, the most potent factor in determining the place of practice, he said.

Dr. Donald G. Anderson, secretary of the council, reported that contributions to the American Medical Education Foundation are gaining in momentum. During 1951, contributions totaling $745,000 were received from 1,811 individual physicians, 33 organizations and 33 lay friends of the medical profession.

Plans for an international conference on medical education were announced by Dr. Louis H. Bauer, secretary-general of the World Medical Association and president-elect of the A.M.A. The meeting will be held in London, August 24-29, 1953. The aim will be: (1) an exchange of ideas; (2) a possible unification of thought; (3) aid to under-developed countries.

"We feel that this will be one of the most important events in medical history," Dr. Bauer said.

Eleven states in the South last year contributed $1,091,500 to a common fund for medical education, it was reported by William J. McGlothlin, Atlanta, consultant for professional programs, Board of Control for Southern Regional Education. The participating states are Alabama, Florida, Georgia, Louisiana, Maryland, Mississippi, North Carolina, South Carolina, Tennessee, Texas and Virginia. The schools in the medical program are Duke, Emory, Louisiana State, Tulane, Medical College of Alabama, Vanderbilt, Meharry and the University of Tennessee.

A somewhat similar program is being worked out to cover 11 western states and two territories, it was announced by Dr. Ward Darley, Denver, vice-president of the University of Colorado and dean of its department of medicine. Legislatures of five states—Colorado, Montana, New Mexico, Utah and Oregon—have approved the plan, clearing the way for activation. Other states involved are Arizona, California, Idaho, Nevada, Washington and Wyoming, and the territories of Alaska and Hawaii. The program is expected to be in full swing by the fall of 1953.

Many speakers were on the three day program which also dealt with standards for the approval of residency training programs, the problems of state boards in interstate endorsement and reciprocity, the place of preceptorships in undergraduate medical education, and problems of internships and residencies as related to medical licensure.

## NEWS ITEM

Recent Publication.

The Significance of the Prominent Pulmonary Artery Segment.

Marcy L. Sussman, George C. Griffith and George Jacobson.

Acta Medica Scandinavica
Supplement 266 to Volume 142
Page 907
1952

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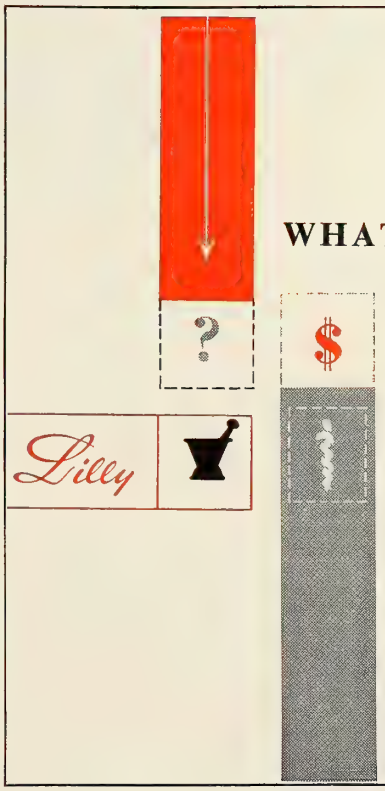
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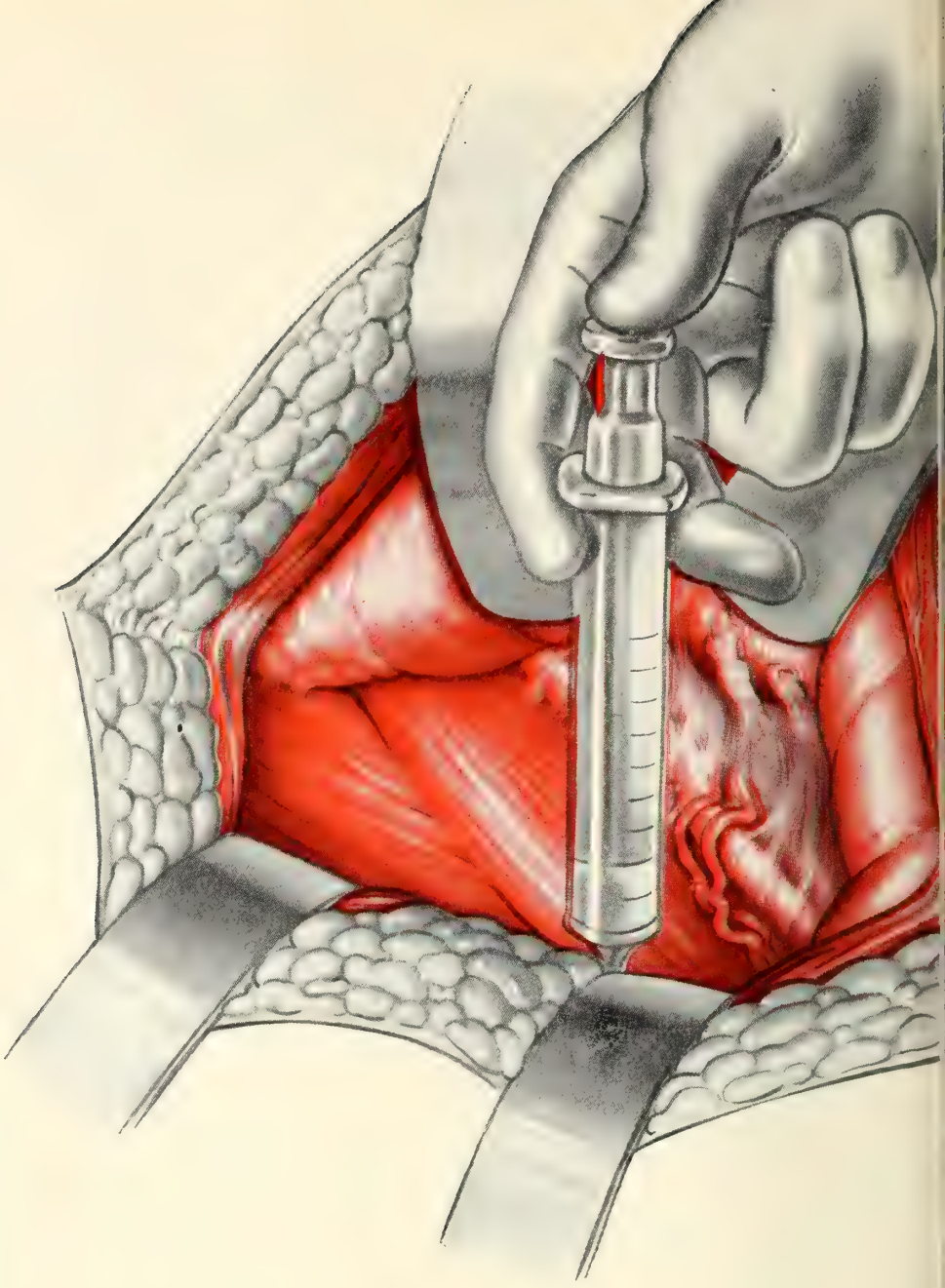



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# Meat and its applicability in the Dietary Management of Atherosclerosis

Contrary to the former belief that serum cholesterol levels are primarily related to ingested animal fat and consequently to dietary cholesterol, it now appears that the total amount of fat in the diet, not its source or cholesterol content, is a more important factor in determining the blood cholesterol concentration.[1,2,3,4] Clinical observation has shown that ingestion of vegetable fat—which contains no cholesterol—will, like fats of animal origin, raise the serum cholesterol level.[3, 5]

Recent basic research on the influence of fats and cholesterol on human health has done much to further progress in the fight against atherosclerosis. It will serve well in dispelling the mistaken fear that reasonable amounts of foods of animal origin predispose the individual to this vascular disease.[6] As a matter of fact, a dietary inadequate in essential nutrients but providing too many calories and too much fat from *any* source may well be an important factor underlying the deposition of fat and cholesterol in the arteries and liver.

Cumulative evidence indicates that lowered blood levels of cholesterol may be effected by restricting the total fat intake.[1] Except in instances of refractory hypercholesteremia, in which a daily fat intake as low as 10 Gm. may not reduce cholesterol levels to normal, diets containing 20 to 30 Gm. of fat, or even more, often produce low cholesterol blood levels. In the clinical application of this principle, various palatable, low fat diets which supply three servings of meat daily (containing 18 Gm. of fat) have recently been suggested for the dietary management of arteriosclerosis and for enlisting the cooperation of patients.[1] The meat servings were chosen from a large variety of cuts and kinds of meat (fat trimmed off, as lean as possible). Meat adds to the eating appeal of the fat-restricted diet and contributes important amounts of biologically complete protein, the B group of vitamins including $B_{12}$, and food iron—all of which are important for a good state of nutrition in the atherosclerotic patient.

1. Hildreth, E.A.; Hildreth, D.M., and Mellinkoff, S.M.: Principles of a Low Fat Diet, Circulation *4*:899 (Dec.) 1951.
2. Bloch, K.: The Intermediary Metabolism of Cholesterol, Circulation *1*:214 (Feb.) 1950.
3. Keys, A.; Mickelson, O.; Miller, E.V.O., and Chapman, L.B.: The Relation in Man Between Cholesterol Levels in the Diet and in the Blood, Science *112*:79, 1950.
4. Gubner, R., and Ungerleider, H.E.: Arteriosclerosis, a Statement of the Problem, Am. J. Med. *6*:60, 1949.
5. Hildreth, E.A.; Mellinkoff, S.M.; Blair, G.W., and Hildreth, D.M.: The Effect of Vegetable Fat Ingestion on Human Serum Cholesterol Concentration, Circulation *3*:641 (May) 1951.
6. King, C.G.: Trends in the Science of Food and Its Relation to Life and Health, Nutrition Rev. *10*:1 (Jan.) 1952.

The Seal of Acceptance denotes that the nutritional statements made in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.

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*Journal of* ARIZONA MEDICAL ASSOCIATION

VOL. 9, NO. 5 MAY, 1952


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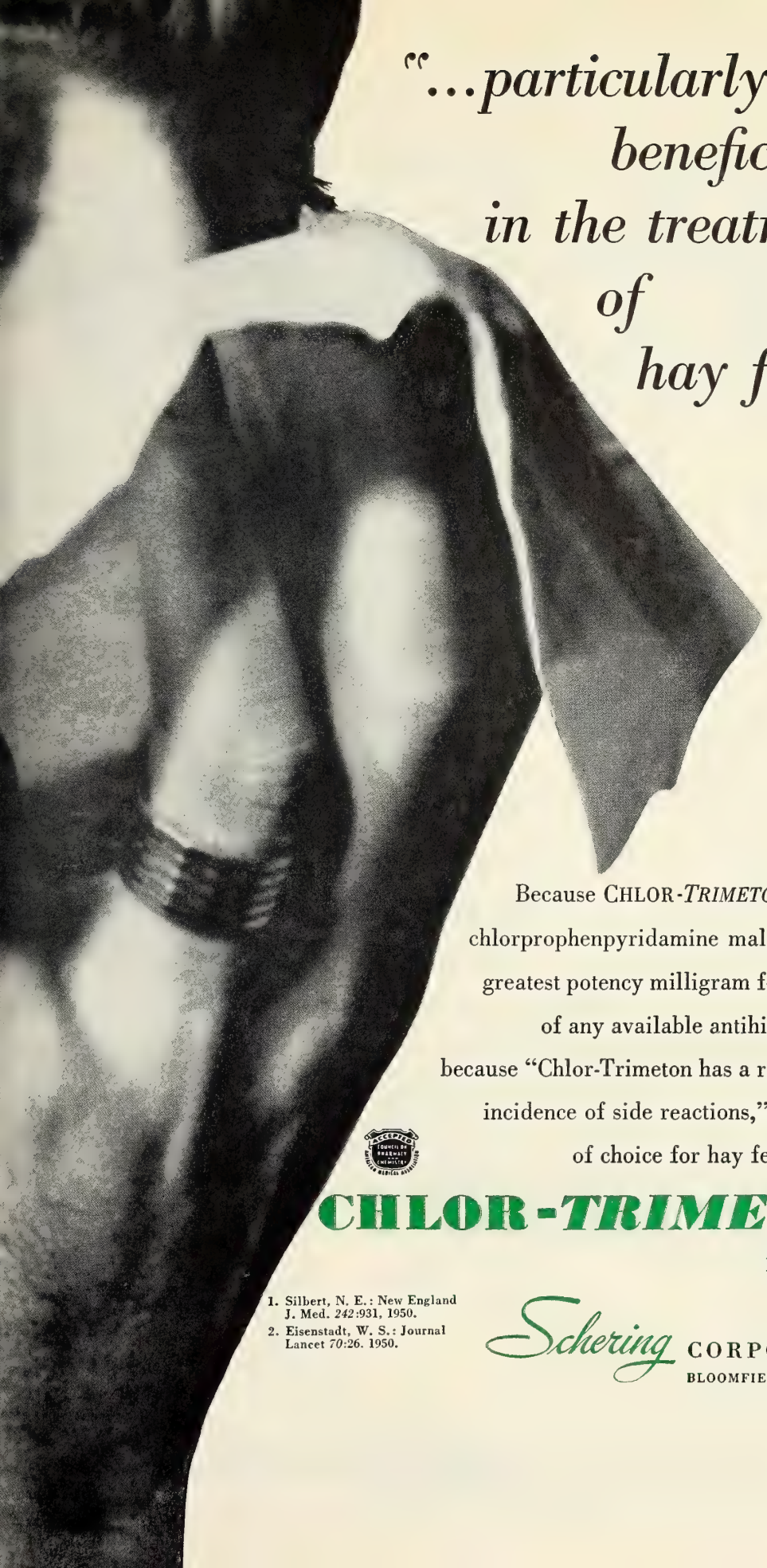
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1. Silbert, N. E.: New England J. Med. *242*:931, 1950.
2. Eisenstadt, W. S.: Journal Lancet *70*:26. 1950.

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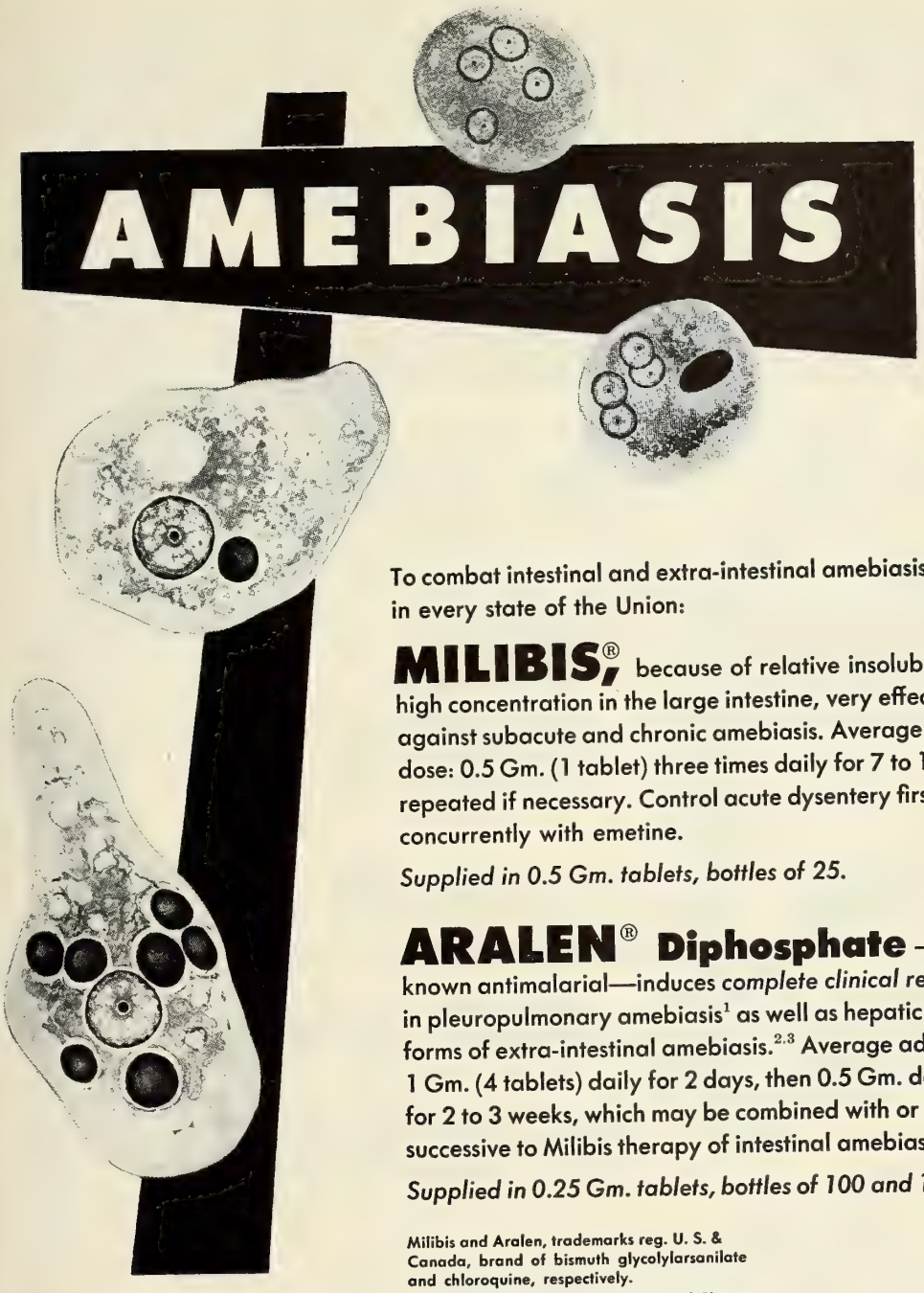


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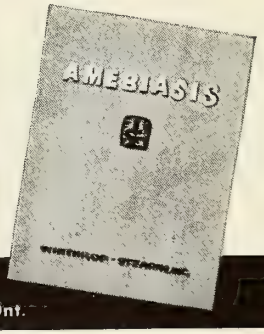
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1. Lindsay, A. E., Gossard, W. H., and Chapman, J. S.: *Dis. Chest*, 20:533, Nov., 1951.
2. Conan, N. J., Jr.: *Am. Jour. Med.*, 6:309, Mar., 1949.
3. Emmett, J.: *J.A.M.A.*, 141:22, Sept. 3, 1949.

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references:

1. Journal-Lancet 70:298, 1950.
2. Rocky Mountain M. J. 48:99, 1951.
3. Am. J. M. Sc. 218:298, 1949.
4. J. M. Soc. New Jersey 48:12, 51.
5. Am. J. M. Sc. 219:139, 1950.
6. U. S. Armed Forces M. J. 1:332, 1950.
7. Circulation 1:502, 1950.
8. Cincinnati M. J. 31:137, 1950.
9. Southern M. J. 44:44, 1951.
10. M. Times 79:83, 1951.
11. J. A. M. A. 146:250, 1951.
12. Circulation 1:508, 1950.

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*Blahey, P. R.: Canad. M.A.J. 66:151 (Feb.)*

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* *Postgrad. Med. 9:106, 1951.*

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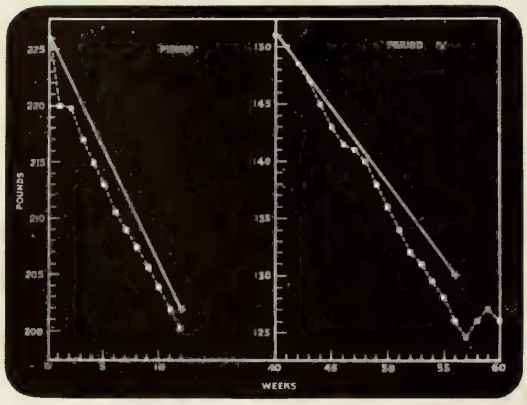
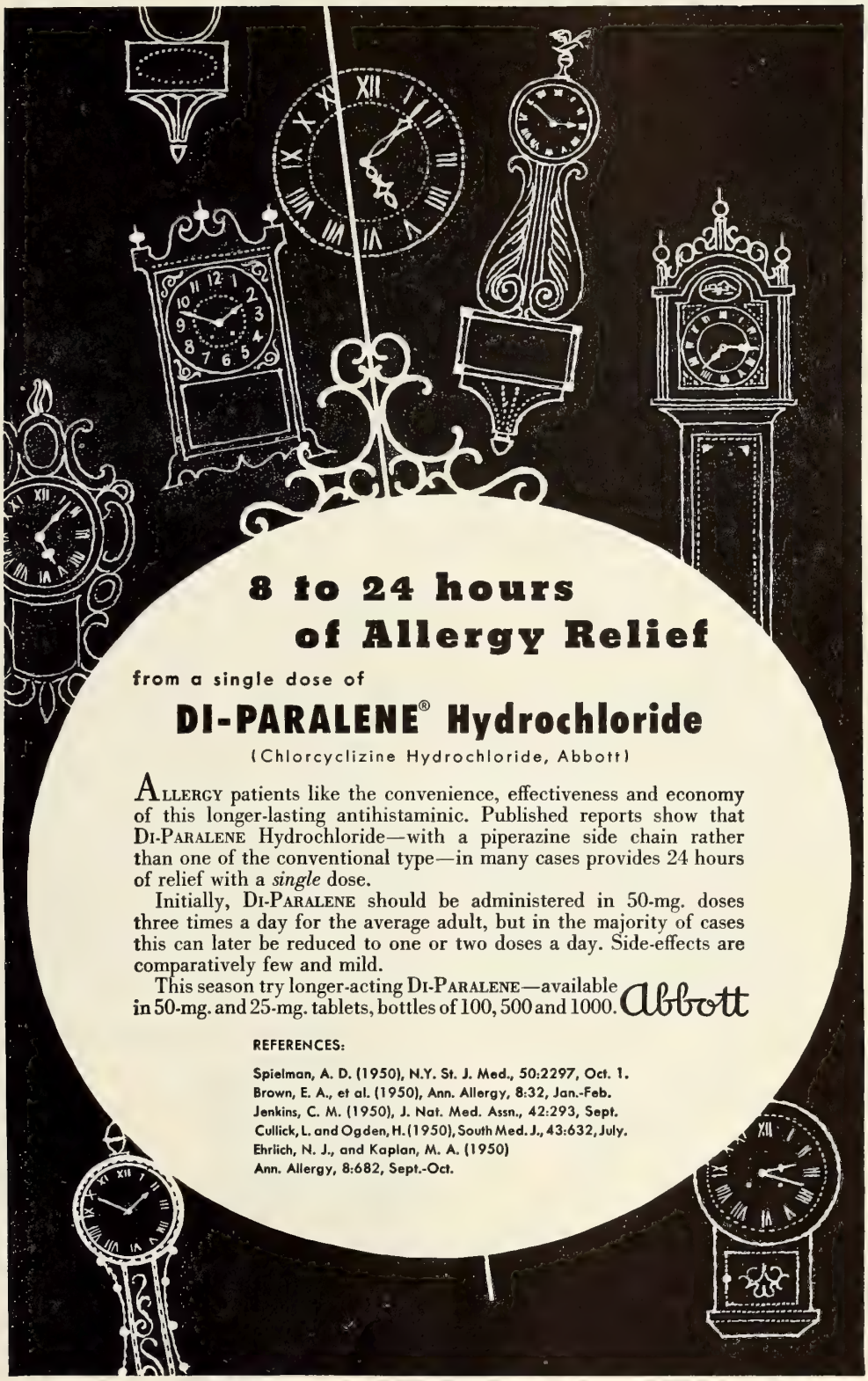



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REFERENCES:

Spielman, A. D. (1950), N.Y. St. J. Med., 50:2297, Oct. 1.
Brown, E. A., et al. (1950), Ann. Allergy, 8:32, Jan.-Feb.
Jenkins, C. M. (1950), J. Nat. Med. Assn., 42:293, Sept.
Cullick, L. and Ogden, H. (1950), South Med. J., 43:632, July.
Ehrlich, N. J., and Kaplan, M. A. (1950)
Ann. Allergy, 8:682, Sept.-Oct.

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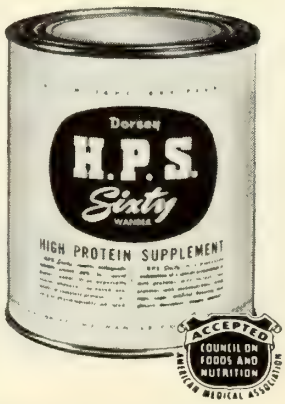
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Vahlquist, B. and Hackzell, G.: Acta Paediatrica *38*: 622 (1949).

| NO. OF CASES | SEX | AGE AT ONSET | CYCLIC VOMITING | DURATION OF ATTACK | INTENSITY |
|---|---|---|---|---|---|
| 31 | 8 ♀ 23 ♂ | 3 yrs. (mean) | 3 out of 31 | 2½ hrs. | severe in all cases |

TABLE CONT'D

| NO. OF CASES | UNILATERAL HEADACHE | NAUSEA | FLIMMER SCOTOMA | VERTIGO | HEREDITY |
|---|---|---|---|---|---|
| 31 | 18 out of 31 | 31 out of 31 | 12 out of 31 | 6 out of 31 | 20 out of 31 |

(reference given above)

In a study of 400 adult migraine patients, it was revealed that 34% had suffered attacks before the age of 15.* These investigators concluded that childhood migraine was a much greater clinical problem than was previously believed and that psychodynamic mechanisms played an important part in the disease.

These criteria are useful in diagnosis:

Headache attacks with symptom-free intervals plus (at least two of the following) nausea, scintillating scotoma, hemicrania, and hereditary predisposition.

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*Katz, J., Friedman, A.P., and Gisolfi, A.: New York State J. Med. *50*: 2269 (Oct.) 1950.

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ARIZONA MEDICINE
Journal of Arizona Medical Association

VOL. 9, NO. 5 MAY, 1952

# Original ARTICLES

## PRIMARY MEGACOLON

THOMAS H. BATE, M. D.
Phoenix, Arizona

Megacolon has been recognized as a clinical entity for over a hundred years. The literature on this subject is voluminous, much of it controversial. In spite of a large literature, primary megacolon is still a rather rare disease. One-quarter of the cases develop before the age of five. It is three times more common in males than in females. The first report of primary megacolon is credited to Perry(29) in 1925. The second report was made by Billard( ) in 1829. The disease is attached to Hirschsprung's(18) name who described this condition in 1888. His report consisted of two cases. The first child died of a progressive cachexia at the age of eleven months, and the second one at the age of seven months with multiple ulcerations of the colon. Hirschsprung (19) later added two additional cases. Bockus (8) defines primary megacolon as a great dilatation, elongation from hypertrophy of the sigmoid colon, involving at times the entire colon and rectum, associated with a retention of an enormous amount of feces and an absent defecation reflex, due to a neuro-muscular derangement of the colonic function, usually congenital in origin. Since the original description of this disease, nearly every known cause of colonic malfunction has been postulated as being the etiological factor of this disease. The following outline, which is modified after Bockus (8), presents the most widely accepted causes of primary megacolon.

### ETIOLOGY OF PRIMARY MEGACOLON

#### MECHANICAL CAUSES (USUALLY DEVELOPMENTAL)

1. Extreme mobility of sigmoid (mesosigmoid too long) resultin torsion. (Barth)
   Increased length of colon, particularly of sigmoid loop. (Marfan)
2. Mucosa of sigmoid thrown into valve-like folds as a result of redundancy. (Perthes, Roser)
3. Kinking, angulation, or adhesions at rectosigmoid. (Treves)
4. Over-development of sphincteric structure at rectosigmoid, or spasm of sphincter at the rectosigmoid. (Goebel)
5. Aplasia of musculature of rectosigmoid. Concetti)
6. Drag of a sigmoid overloaded with meconium acting as a valve.
7. Partial atresia of anal canal, rectum, or sigmoid.
8. Spasm of anal sphincter due to fissure, ulcer, or other cause. (Fenwick, Kastner, Bensaude, Hurst)

#### INFLAMMATORY CAUSES

1. Infective or inflammatory process involving the colon primarily. (Walker and Griffiths)

#### DERANGED NERVOUS MECHANISM

1. Abnormality in sympathetic innervation of longitudinal muscle fibers of colon. (Formad)
2. Neuromuscular segmental defect in colon or paraysis of a gut segment. (Hawkins)
3. Hyperactivity of sympathetic innervation of distal colon, relief by lumbar sympathetic,

ramisectomy. (Wade and Royal)

4. Hypoactivity of sacral parasympathetic innervation to distal colon.
   a. Anal achalasia (Hurst, Wade, Lehmann, Gask, Ross and Fraser)
   b. Achalasia of musculature at rectosigmoid. (Martin and Burden)
   c. Degenerative changes in Auerbach's plexus-(Cameron and Kernohan)
   d. Disease of sacral autonomic fibers (Ishikawa).
   e. Vitamin $B_1$ deficiency as cause of achalasia (Etzel).
   f. Lack of propulsive motility of distal colon.
   g. Abnormality in form or numbers of cells of myenteric plexia (Dalla Valle, Robertson and Kernoian, Tiffin Chandler and Faber, Zuelzer and Wilson).

During recent years the students of this disease have suggested theories that some type of deficiency of the nerve supply of the bowel is responsible for primary megacolon.(10,30,38,43). These theories are supported by adequate microscopic pathological findings. Beginning with the work of Dalla Valle(10) in 1920, and supported by the findings of other workers, the myenteric plexuses have been found to be at fault. In many cases there has been an agenesia and in others there is a marked diminution in the number of ganglion cells of the myenteric plexuses. In the normal colon the myenteric plexus forms a fairly continuous sheet between the two layers of muscle. The area of dyskinesia in the myenteric plexus is almost absent. In two of our cases no myenteric plexuses occurred in the area of dyskinesia. In the photomicrographs accompanying the article, Figure Number One shows the presence of myenteric plexus This section was removed about 12 cm. above the dyskinetic section. Myenteric plexuses are present in this slide. The second slide, Figure Number Two, taken at the area of dyskinesia shows a complete absence of nerve or myenteric plexus cells. The myenteric plexuses, or the plexuses of Auerbach and Miessner, are the terminal ganglia of the sympathetic nervous system. Sympathetic ganglia(2) arrive from sells of the ganglion crest and the neural tube, which at 10 mm. migrate distally along the nerve roots and accumulate in the masses of the dorsal lateral to the aorta. In the region of the trunk these paired segmental clusters unite from segment to segment to form a

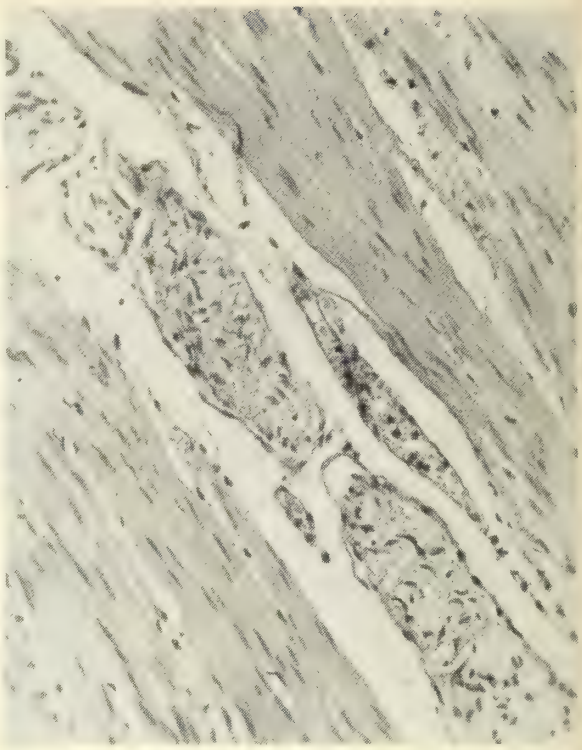


**FIGURE 1 A.**
**X 1000. Showing myenteric plexus fibers normal in structure and amount taken 12 cm. above area of dyskinesia.**

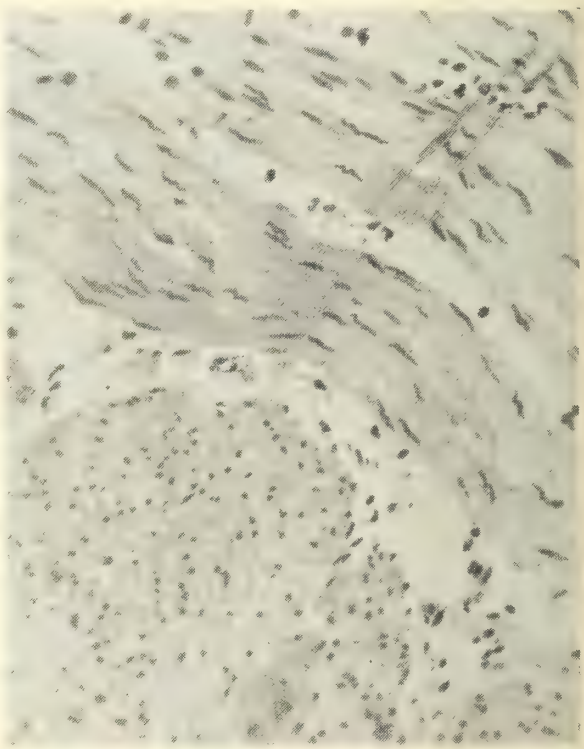


**FIGURE 1 B.**
**X 1000. Taken through area of dyskinesia of same case shows an absence of all nerve elements.**

longitudinal cord and are converted into nerve fibers, thereafter linking the ganglia in a commissural manner. The resultant ganglionated cords are the sympathetic trunks. In addition to the primary gangia of the paired sympathetic trunks, there are other more peripheral ones, known as collateral ganglia belonging to the great prevertebral plexuses such as the cardiac, coeliac and hypogastric. Still further distally are the terminal ganglia located near or even within the structures they innervate. This is the group that includes the coeliac and the cardiac ganglia as well as the ganglion masses of the myenteric and submucous plexuses. It is readily seen many areas exist where arrest or maldevelopment of the plexuses may occur. The pathological physiology of primary megacolon was demonstrated very adequately by Swenson(37), Rhinelander and Diamond, by the use of ink-writing kinematographs with ballons on the ends of their catheters. These workers demonstrated that the propulsive effort in the recto-sigmoid area, or the area of dyskinesia, was flat or absent compared to the descending or transverse colon in patients suffering with primary megacolon. In their control cases, children who had colostomies for other various reasons exclusive of megacolon, the peristalic propulsive effort was seen in all three areas studied.

Severe constipation and obstipation are the presenting complaints. Distention, audible and visible peristalsis, cramps and vomiting occur in varying degrees. Large fecal impactions are frequently present in the left side of the colon, whereas the rectal ampulla always remains empty. Hirschsprung(18) commented specifically on this finging in his paper. The signs and symptoms of primary megacolon are those which ordinarily follow low, chronic, partial colonic obstruction. If the patient presents a pot-belly statue, a diagnosis of this disease is usually established by means of x-ray study. However, a special technique(36) must be used. The technique recommended consists of a slow instillation of barium enema under fluoroscopic observation until the lowest portion of the dilated bowel can be seen. The flow of barium is then stopped and the bowel manipulated through the abdominal wall with the patient under the fluoroscope. The area of spasm can then be demonstrated without being obscurred by the overlying filled and dilated sigmoid. By this method the picture of a functional obstruction produced by dyskinesia of the rectum or recto-sigmoid can usually be seen. The barium must be allowed to enter slowly and in small quantities. It is essential to examine the patient in the oblique projection because if this is not done the appearance produced is that which is so familiar in much of the literature, a colon which appears dilated to the anus. However, with the oblique projection a portion of the rectum or the recto-sigmoid up to 10 cm. in length can be visualized and is consistently less than normal in character. Contour is frequently irregular and often turbulent and purposeless peristalic activity may be seen. Occasionally there may be reversed peristalsis so that the barium may be carried sephalad into the sigmoid, but more frequently no peristalic activity can be seen.

As in all controversial subjects there is a considerable difference of opinion as to the treatment of primary megacolon. The methods of therapy employed at the present time may be divided into three groupings: (1) Attempt sto control the disease by medical management; (20, 22, 24). (2) Surgical treatment consisting of resection of all or parts of the dilated and hypertrophied colon;(4, 7, 9, 12, 13, 16, 17, 23, 26, 35, 36, 37). (3) Section of the sympathetic pathways to all or part of the colon.(1, 5, 14, 28, 32, 33). The medical treatment consists of special diets, laxatives and enemas, and various drugs that influence intestinal motility. Success has been reported with such drugs as Mecholyl Bromide, which tends to increase intestinal peristalsis. Equally good reports have been reported with Syntropan. These drugs presumably have opposite effects; the former being a parasympathomimetic and the latter a parasympathetic depressant drug. Mild cases of primary megacolon may be controlled medically for a long period of time, but in a severe form these measures always fail. The method of surgical management has been stated above consists of the resection of all of the dilated and hypertrophied bowel or parts thereof. This procedure is based on the theory that the seat of the disease is the enlarged portion of the colon. Resection in these cases is always followed by a recurrence proximal to the line of resection. A total colectomy with an ileo-sigmoidostomy is advocated by many surgeons, even though only a portion of the colon seems to be involved.

However, after the removal of the entire colon, the ileum has been seen to undergo dilatation and a hypertrophy with a recurrence of the symptoms. The other surgical approach to the treatment of primary megacolon is a treatment of surgical interruption of the parasympathetic pathways to all or part of the colon. This approach is originally described by Wade and Royal(40). Scott and Morton(32) in 1930 describe dthe effect of spinal anesthesia on patients with megacolon. Many workers believe that evacuation following the use of spinal anesthesia is an indication for lumbar sympathectomy(31). It is obvious however, that a sympathectomy does not reproduce a physiological effect of spinal anesthesia. Unilateral or bilateral lumbar sympathectomy, presacral, periaortic and inferior mesenteric chain resections have all been tried combined with splanchnicectomy. The follow up on these cases in which this type of operation has been used has demonstrated that the results are far from satisfactory. In 1948 Swenson(35) and his co-workers presented evidence supporting their contention that primary megacolon was due to the malfunction of the rectal sigmoid that results in partial colonic obstruction. This obstruction accounts for the dilatation and hypertrophy of the colon which retains its peristalic function. Swenson and Bill (35) devised an operation which has been used by them some 35 times with a high degree of success. The technique is here described:

## TECHNIQUE OF THE PULL-THROUGH OPERATION

The first part of the operation is performed the same as the combined abdominal perineal resection. The sigmoid and rectum are freed from all attachments in the pelvis down to the levator ani muscle. The bowel is then divided proximal to the abnormal portion and both ends are closed with a continuous catgut suture. The distal end is then pulled out through the anus. The mucosal surface which is now presenting and the peritoneum are then carefully scrubbed and prepared with mercresin scrubs. Drapes are placed and the bowel is opened transversally 2½ cm. from the anal skin margin and the proximay bowel is then pulled down through this opening. The anastomosis is made, using first a row of black cotton Lembert sutures through the muscular coats of the two segments of the bowel. Up to this point the procedure has been relatively aseptic. The proximal bowel is then opened and the mucosa of the two ends are approximated with continuous chromic catgut suture. The anastomosed bowel is then pushed back through the anus and the suture line assumes a position of about 2½ cm. above the anal skin margin. The abdomen is then closed in layers.

Figure Number Two illustrates the various steps in the pull-through operation.

Swenson(37) reported the use of this technique in 34 patients, with one post-operative death and what appears to be a complete cure in the remaining 33 patients.

Our series consists of only 9 cases and reflect the results of Swenson's(37) work. It is true that the oldest case is four years post-operative and the balance less, perhaps too soon to accurately evaluate the results. However, these children seem to be normal.



**FIGURE. 2. Essential Steps of Pull-Through Operation. A. Bowel is delivered and clamps applied well above area of dyskinesia.**

### BIBLIOGRAPHY

1. Adson, A. W.: Hirschsprung's disease: Indications for and results obtained by sympathectomy. Surgery 1:859-877, 1937.
2. Arey,: Developmental Anatomy.
3. Barth,: Cited by Bockus.
4. Barrington-Ward, L. E.: Congenital enlargement of colon and rectum. Brit. J. Surg. 1:345-360, 1914.
5. Best, C. H., and Taylor, N. B.: The physiological basis of medical practice. Third Edition 1942, 1943, pp. 499-502, Williams and Wilkins, Baltimore.
6. Billard,: Cited by Bockus.
7. Brenner, E. C.: Pediatric Surgery, Lea & Febiger 1938, Chap. XXXIV, p. 528.
8. Bockus,: Gastroenterology, Saunders, Vol. 2, p. 398, 1946.
9. Cattell, R. B., and Colock, B. B.: Congenital megacolon. Surg. Clin. of North America 26:644-655, 1946.
10. dalla Valla, A.: Riecrche istologiche su di un caso di megacolon congenito. Pediatria 28:740-752, 1920.
11. DeTakats, G., and Biggs, A. D.: Observations on congenital megacolon. J. Pediatrics 13:819-846, 1938.
12. Fenwick, W. S.: Hypertrophy and dilatation of colon in infancy, Brit. Med. Jour. 2:564-567, 1900.
13. Finney, J. M. T.: Congenital idiopathic dilatation of colon. (Hirschsprung's Disease) Surg. Gynec. & Obst. 6:624-643, 1908.
14. Fraser, J.: Surgical aspects of certain disturbance of involuntary nervous system met with in alimentary tract. Brit. M. J. 1:359-364, 1926.



B. Bowel transected for emptying of impacted contents.



D. The distal segment is drawn through the anus. The mucous membrane is now on the outer surface of the bowel.



C. Distal and proximal ends closed with sutures. Note the difference in size. The smaller end represents the area of dyskinesia.



E. The distal segment is being opened.



F. The proximal segment is being drawn through the opening in the distal segment.



H. Anastomotic line being replaced in anus.



G. Anastomosis is completed. Patency being checked.

15. Ganter, G.: Uber die Peristalik des menschlichen Dunndarms. Munchen, med. Wchnschr. 68:1447, 1921.
16. Grimson, K. S., Vandrift, H. N., and Dratz, H. M.: Surgery in obstinate megacolon: radical one stage resection and ileosigmoidostomy. Surg. Gynec. & Obst. 80:164-173 1945.
17. Hawkins, H. P.: Idiopathic dilatation of colon. Brit. M. J. 1:477-483, 1907.
18. Hirschsprung, V.: Stuhltragheit Neugeborener in Folge von Dilatation und Hypertrophic des Colons. Jahrb f. Kindern. 27:1-7, 1887.
19. Idem.: Present status of treatment of Hirschsprung's disease. Am. J. Surg. 15:219-227, 1932.
20. Jackman, R. J., and Bargan, J. A.: Influence of certain antispasmodic drugs on intestine of man. Surg. Gynec. & Obst. 67:63-68, 1938
21. Judd, E. S., and Adson, A. W.: Lumbar sympathectic ganglionectomy and ramisectomy for congenital idiopathic dilatation of colon. Ann. Surg. 88:478-498, 1927.
22. Klingman, W. O.: Treatment of Neurogenic megacolon with selective drugs. J. Pediat. 13:805-818, 1938.
23. Ladd, W. E., and Gross, R. E.: Abdominal surgery of infancy and childhood. 455 pp. Philadelphia: W. B. Saunders Co., 1941, pp. 152-154.
24. Law, J. L.: Treatment of megacolon with acetylbetamethylocholine. Am. J. Dis. Child. 60:262-282, 1940.
25. Marfan: De la constipation des nourrissons et en particulier de la constipation d'origine congenitale. Rev. mens. de. mal. de l'enf. 13:153-178, 1895.
26. Martin, E., and Burden, V. G.: Surgical significance of rectosigmoid sphincter. Ann. Surg. 86:86-91, 1927.
27. Mya, G.: Due osservazioni di dilatazione ed ipertrofis congenita del colon (Megacolon congenito) Sperimentale 48:215-231, 1894.
28. Rankin, F. W., and Learmonth, J. R.: Section of sympathetic nerves of distal part of colon and rectum in treatment of Hirschsprung's disease and certain types of constipation. Ann. Surg. 92:710-720.
29. Perry: Cited by Bockus.
30. Robertson, H. E., and Kernohan, J. W.: Myenteric plexus in congenital megacolon. Proc. Staff Meet. Mayo Clinic. 13:123-125, 1938.
31. Sarnoff, S. J., Arrowood, J. G., and Chapman, W. P.: Differential spinal block. IV. Investigation of intestinal dyskinesia, colon atony, and visceral afferent fibers Surg. Gynec. & Obst., 86:571-581, 1948.
32. Scott, W. J. M., and Morton, J. J.: Sympathetic inhibition of large intestine in Hirschsprung's disease. J. Clin. Investig. 9:247-262.
33. Smithy, H. G., and Kredel, F. E.: Localized acquired megacolon treated by sympathectomy. Surg. 22:259-270, 1947.

34. Stabins, S. J., and Morton, J. J., and Scott, W. J. M.: Spinal anesthesia in treatment of megacolon and obstinate obstipation. Am. J. Surg. 27:107-111, 1935.

35. Swenson, O., and Bill, A. H., Jr.: Resection of rectum and rectosigmoid with preservation of sphincter for benign spastic lesions producing megacolon: experimental study. Surgery 24: 212-220, 1948.

36. Swemson, O., Neuhauser, E. B. D., and Pickett, L. K.: New concepts of etiology, diagnosis and treatment of Hirschsprung's disease. Pediatrics 4:201-209, 1949.

37. Swenson, O., Rheinlander, H. F., and Diamond, I.: Hirschsprung's disease: A new concept of the etiology. Operative results in thirty-four patients. New Eng. J. Med., Vol. 241, No. 15:551-556, 1949.

38. Tiffin, M. E., Chandler, L. R., and Faber, H. K.: Localized absence of ganglion cells of myenteric plexus in congenital megacolon. Am. J. Dis. Child. 59:1071-1082, 1940.

39. Treves, F.: Idiopathic dilatation of colon, illustrated by case in which entire rectum, sigmoid flexure and descending colon were excised. Lancet 1:276-279, 1898.

40. Wade, R. B., and Royle, N. D.: Operative treatment of Hirschsprung's disease: New Method: with explanation of technique and results of operation. M. J. Australia 1:137-141, 1927.

41. Walker, T. J., and Griffiths, J.: Congenital dilatation and hypertrophy of colon fatal at age of 11 years. Brit. M. J. 2:230, 1893.

42. Yeazell, L., and Bell, H. G.: Resection of colon in six cases of Hirschsprung's disease. Surgery 13:941-950, 1943.

43. Zuelzer, W. W., and Wilson, J. L.: Functional intestinal obstruction on congenital neurogenic basis in infancy. Am. J. Dis. Child. 75:40-64, 1948.

# HYPERVITAMINOSIS A
## Study Of An Unusual Case

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Increasing attention is now being paid to the syndrome of hypervitaminosis A, which was first described clinically in 1944.(1) The following case is reported because it differs in a number of aspects from any case previously described in the literature, and will contribute more information on the varying clinical facets which this syndrome may present.

### REPORT OF A CASE

N. S., an 8 year old white male, was first seen on March 25, 1950, for a routine check-up. It was felt that the patient had endured more than a normal number of upper respiratory infections. His past history was not remarkable.

Examination at that time was essentially normal except for hypertrophied tonsils. The patients was referred to an otolaryngologist, and a tonsillectomy performed in April, 1950. Recovery was uneventful.

The patient was next seen on July 28, 1951, at which time the presenting complaints were pains in the calves and thighs, and a mild skin rash of one month's duration. The leg pains had actually been present since infancy and occurred mostly after arduous exercise, or at night when the boy first laid down before going to sleep. They seemed to have increased in frequency in recent months. The skin rash consisted of scattered, discrete, macular lesions on the face, neck, and interscapular area which were quite pruritic.

Physical examination at this time was not remarkable except for: (1) the skin lesions as described above which were excoriated; (2) a faint aortic systotic murmur heard only in the upright potion and more prominently on expiration; (3) a palpable non-tender liver distinctly enlarged 2 finger breadths below the right costal margin. The hepatomegaly had not been present in March, 1950.

The child's mother, a registered nurse, was questioned concerning the boy's ingestion of medication. He had received ten drops of Oleumpercomorph(R) daily until the age of one year, then 1 teaspoon of Homicebrin(R) daily until 4 years of age, and one Vigraine(R) capsule daily until one year previously. At this time his mother decided that he needed more vitamins, and on her own initiative commenced administering Theragran(R) capsules twice daily. If he seems a bit more listless than usual, he would receive one or two additional Theragran(R) capsules that day. Each Theragran(R) capusule contains 25,000 units of Vitamin A; thus 50,000 to 100,000 units of Vitamin A were administered daily for a period of one year. In addition the boy consumed quite a bit of milk, butter and green or yellow vegetables.

Radiological examination of the pelvis, forearm, femurs, tibiae, and fibulae were normal.

Laboratory Data: On August 3rd the red blood count was 4.5 millions per cubic millimeter the hemoglobin was 11.5 gm. %; the white blood count was 6,000 per cu. m.m., differential count was segmenters 31%, lymphoctyes 65%, monocytes 2%, and eosinophiles 2%; the Urinalysis was normal.

Liver profile studies were performed on August 2nd, 3rd, and 6th showing the following results: the bromsulfalein test, no dye was retained; the cephalin flocculation was 0, and 1 plus in 48 hours (within normal limits for this laboratory); the thymol turbidity showed 1.2 units; the prothrombin time was 15 seconds and 100% of normal; the Wintrobe sedimentation

rate was 8 mm. in 1 hour; a direct Vandenbergh was negative; the indirect Vandenbergh –0.1 mg. bilirubin/100cc; the serum cholesterol was 245 mg. %; the total protein was 5.61 gm. % with serum algumin 3.16 gm. % and the serum globulin was 2.45 gm. %; the A/G Ratio was 1.3:1; the icterus index was 10 units; and the lipochrome index was 5 units.

Clinical Course—The blood serum was carrot-colored. The Theragran(R) capsules were discontinued on August 6th, and on August 11th a fasting Vitamin A blood level was 124 mcg %.** He was then placed on a Vitamin A-free and low carotene diet. On August 28th, a Vitamin A toleranc etest was performed. His fasting Blood Vitamin A level had by this time fallen to 31 mcg. %. After a test dose of 75,000 units of Vitamin A acetate was administered by mouth, his blood level at three hours was 57.5 mcg %, at 6 hours 80 mcg %, and at 9 hours it was 40 mcg %.***

On September 12th, his liver had receded in size until it was palpable only one half finger breadth below the costal margin, and the excoriated skin lesions had rapidly disappeared without specific treatment. He was free of these lesions for the first time in two months. The myalgia of his thighs persisted unchanged, however, and probably has no relationship to hypervitaminosis A.

## COMMENT

At the time of preparation of this report only 17 cases had been reported in American literature to my knowledge. This case is distinctive in a number of respects:

1. AGE.—All previous reported cases have occurred in infants or young children (the oldest being 37 months), with the exception of a 44

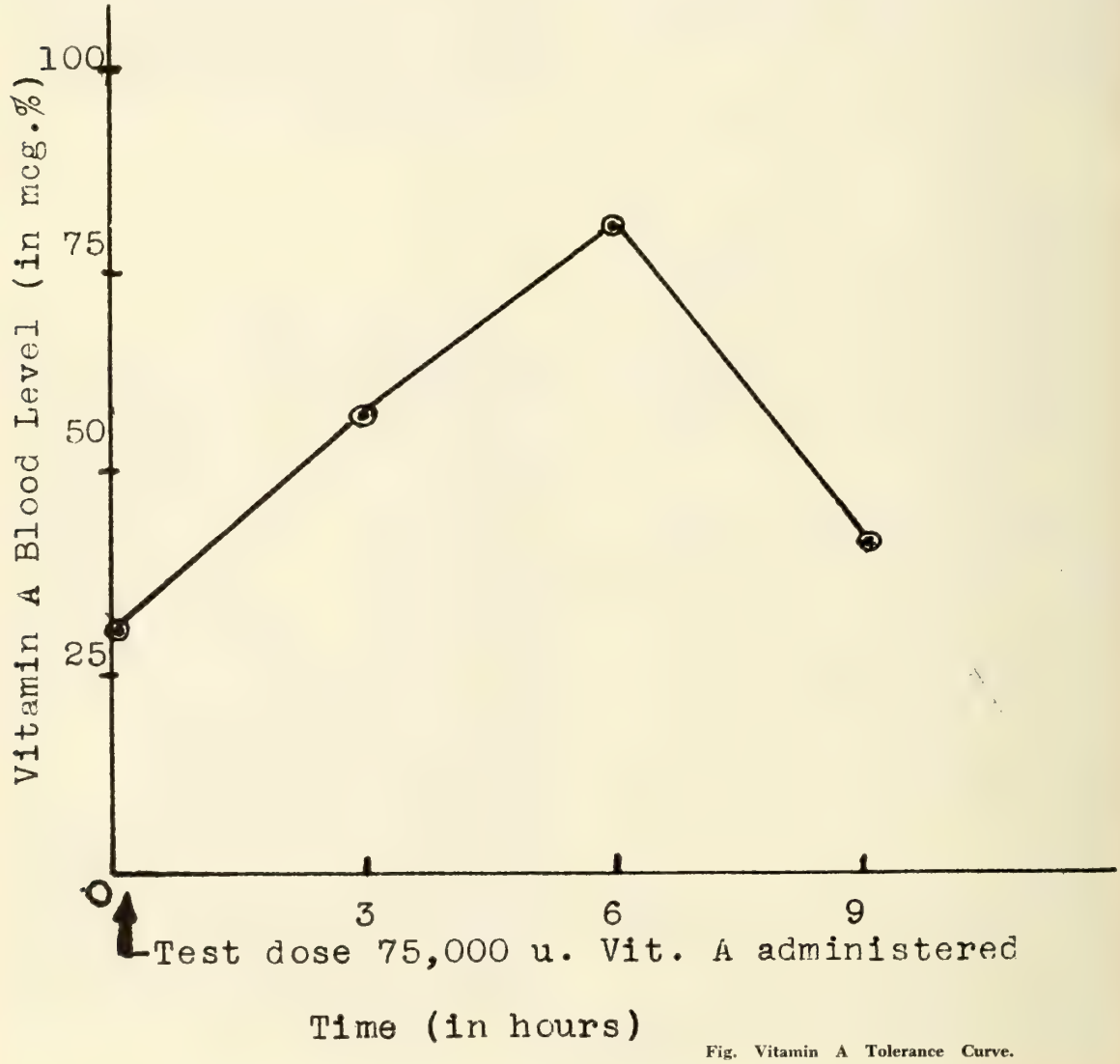



Fig. Vitamin A Tolerance Curve.

year old woman reported by Sulzberger and Lazar.(2) This is the first instance reported in an older child.

2. DOSAGE.—The daily dosage of Vitamin A administered in this case is more moderate than that reported in most cases, probably averaging no more than 100,000 units daily (plus a moderate amount of ingested carotenes). The daily dosage in most other reports averaged 200,000 to 600,000 or more units of Vitamin A daily.

3. SKELETAL CHANGES.—Like the case of Sulzberger and Lazar(2) in the adult, this boy exhibited no abnormal roetgenological findings. This is in contrast to the other cases, wherein cortical exostoses and periostitis were almost always found. This is probably due to the fact that the more mature stage of bone growth in the older child makes the skeleton less susceptible to toxis stimulation by excessive amounts of Vitamin A than that of an infant or a young child. In this respect an analogy might be drawn to the far less drastic skeletal changes seen in the older child than in the young children in the hypovitaminoses—scurvy and rickets. The more moderate Vitamin A dosage in this case might also be a factor.

4. CAROTENEMIA.—This boy had both hypervitaminosis A and moderate carotenemia. The carotenemia is of no significance clinically, for moderate carotenemia produces no symptomatology.(1) Some of the previously reported cases of hypervitaminosis A have exhibited carotenemia, but a number have not.(3)

5. HEPATOMEGALY.—As in the majority of cases which have been reported, hepatomegaly was a prominent finding in this case. This is noteworthy because hepatomegaly was not present in the adult case mentioned above.(2) The enlarged liver rapidly diminished in size on removal of excessive ingestion of Vitamin A. Unfortunately no biopsy specimen of these enlarged livers has ever been reported.

6. LIVER FUNCTIONS.—With widespread indiscriminate use of potent vitamin preparations in vogue at the present time, one would expect vastly greater incidence of this syndrome than would be evident from the paucity of reported cases. The explanation for this is twofold: lack of recognition of many of these cases, and an individual intolerance to Vitamin A by those children who develop the syndrome. The capacity of the liver to store Vitamin A in normal individuals in enormous and thus the body's tolerance to Vitamin A is great. It is thought, however, that the Vitamin A hepatic storage mechanism in these individuals is impaired. This is aptly illustrated by the brother of this patient, 6 years of age, who ngested the same dosage of Theragran(R) capsules over the same length of time, and yet failed to develop hepatomegaly or any signs of hypervitaminosis A.

Nevertheless, in this case, as in all others previously reported in which the liver studies have been performed, no consistent damage to any specific hepatic function has been demonstrated.)3) Sulzberger and Lazar(2) postullated hypoprothrombinemia in their adult case, but did not report a prothrombin determination. In this case the prothrombin time was normal.

It has been suggested that impairment of the hepatic Vitamin A storage mechanism may be demonstrated by performing a Vitamin A tolerance test. The Vitamin A tolerance curve performed on this patient shows considerable elevation. Only two reports of Vitamin A tolerance tests have previously been presented on these patients.(3) In one instance the curve was normal, and in the other elevated.

## SUMMARY

1. A case of hypervitaminosis A is reported, the first such instance recorded in an older child. The toxicity in this case is apparently milder than in others presented.

2. The outstanding features in this case were hepatomegaly and a discrete excoriated macular skin rash. It is urged that hypervitaminosis A be considered in the differential diagnosis of hetatomegaly.

3. A discussion of distinctive features of this case, particularly relative to hepatic function, is presented.

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*Valuable assistance in establishing the diagnosis was rendered by T. R. Gregory, M.D.

**Vitamin A blood levels were performed by Laboratories of Harold Wood, M.D. and Good Samaritan Hospital, Phoenix, Arizona.

***The Vitamin A determinations were performed according to the method of Dann and Evelynn. The normal range for this method is 15-60 mcg%.

1. Josephs, H. W.: Hypervitaminosis A and Carotenemia, Am. J. Dis. Child. 67:33 (Jan.) 1944.

2. Sulzberger, M. B. and Lazar, M. P.: Hypervitaminosis A, J.A.M.A. 146:9 (June 30) 1951.

3. Fried, C. T. and Grand, M. J.: Hypervitaminosis A, Am. J. Dis. Child. 79:475 (March) 1950.

# BASIC *Science* SEMINAR

## PHYSIOLOGY OF MENSTRUATION

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Menstruation is the termination of a sexual cycle in which ovulation is the key point. Throughout the animal kingdom there are impotant species differences in the mechanism of the sexual cycle. Some species ovulate only upon sexual intercourse. In these species a nervous stimulus from the vagina and cervix must apparently reach the pituitary to elicit the gonadotrophic discharge which is essential to ovulation and corpus luteum formation. In other mammals with a seasonal estrus, such as, bats, climatic conditions (especially length and intensity of light) presumably play a corresponding role. In animals with a spontaneous sexual cycle, and these include the majority of mammals, including man, the regulation of the cyclicity appears to be dependent upon the interactions of the pituitary and the ovaries with their specific hormones.

It is with this last group that we are concerned; and, of these only a few of the mammals undergo menstruation. This phenomenon is limited to the human and a few sub-human primates.

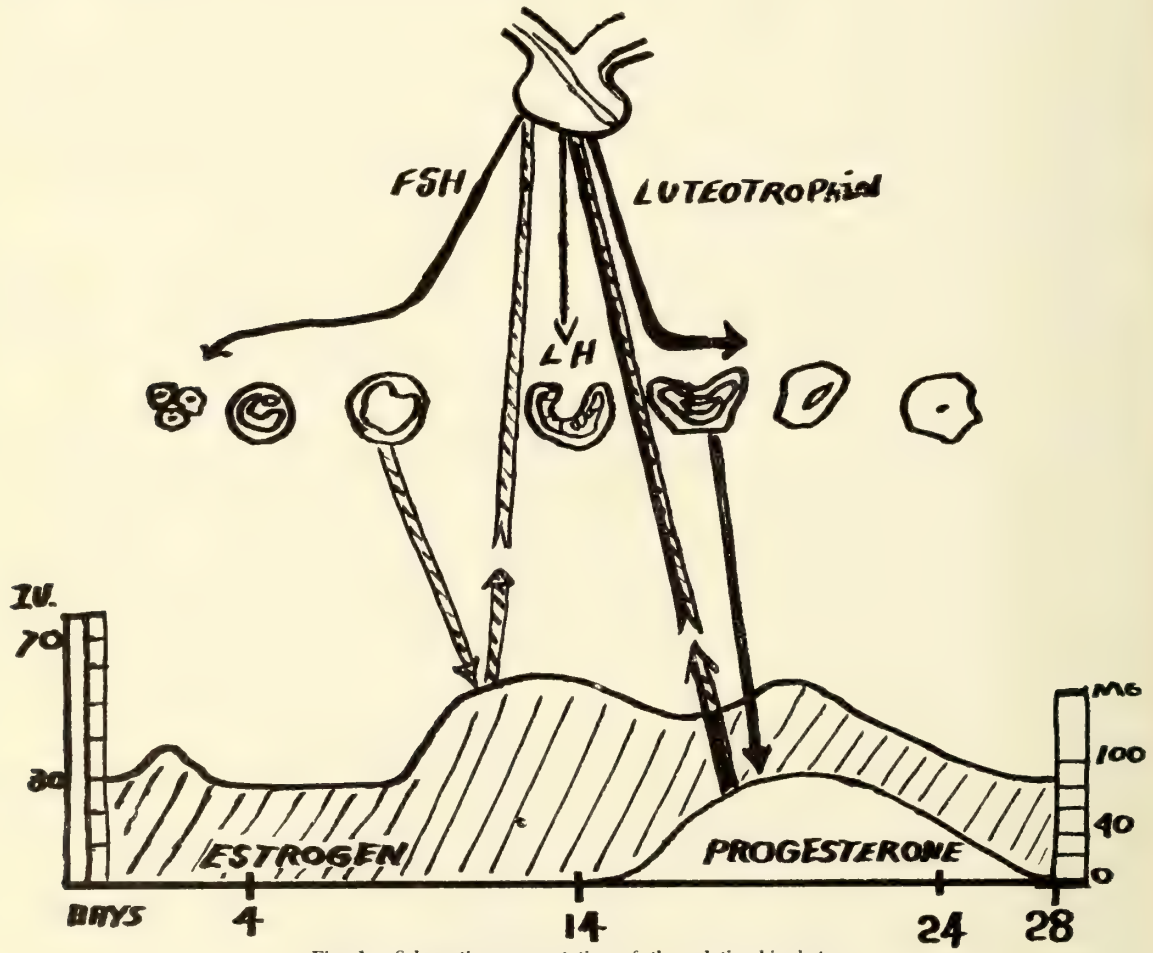



Fig. 1. Schematic representation of the relationship between the pituitary and ovarian hormones.

One can define mentruation as the breakdown and shedding of an endometrium. This is characterized by bleeding from the resulting wound surface. It is normally due to the withdrawal of ovarian hormones from the organism of a female whose endometrium has been first developed by estrogen and then acted upon by progesterone.

There are two endocrine glands and five hormones which control the sexual cycle. The pituitary gland produces three hormones which are designated as: Follicle Stmulating Hormone (FSH) or (Prolan A); and Luteinizing Hormone (LH) or (Prolan B); and Luteotrophin.

The first of these hormones FSH acts upon the ovaries—specifically, upon the theca interna cells of the developing Graafian follicle. The second one, LH, acts upon the ruptured Graafian follicle and causes the development of the lutein cells of the corpus luteum from the previous theca interna cells of the Graafian follicle. Luteotrophin the third hormone from the pituitary may play a role in the maintenance of the corpus luteum.

The ovaries produce two hormones. The theca interna cells of the Graafian follicle produce estrogen; and, the converted lutein cells of the corpus luteum produce progesterone. Estrogen acts upon the endometrium causing growth, vascularization and hypertorophy, and stimulates uterine contraction. Progesterone checks mitosis and growth of the endometrium; promotes function of the glands; and prevents and lessens contraction of the uterus.

There is a fine balance in the quantity and time of appearance between the hormones of the pituitary and ovaries. This can best be followed by considering briefly the mtabolism of the hormones during the sexual cycle. (Fig. 1)

(1) Estrogenic hormone concentration in urine rises from a low after the menses to a peak at about the time of ovulation. This is followed by a slight decline; and, subsequently, by a second premenstrual rise. During the menses, the urinary elimination of the estrogens is hardly detectable.

(2) Pregnandiol excretion (indication of progesterone formation) is negligible during the entire follicular phase, but rises gradually after ovulation to a peak at the middle of the luteal phase. It falls to a low level a few days prior to menstruation.

(3) Gonadotrophins are only present in negligible amounts during the entire cycle except at ovulation time.

(4) Testoids, 17K steroids, and corticoids remain at about the same level during the entire cycle.

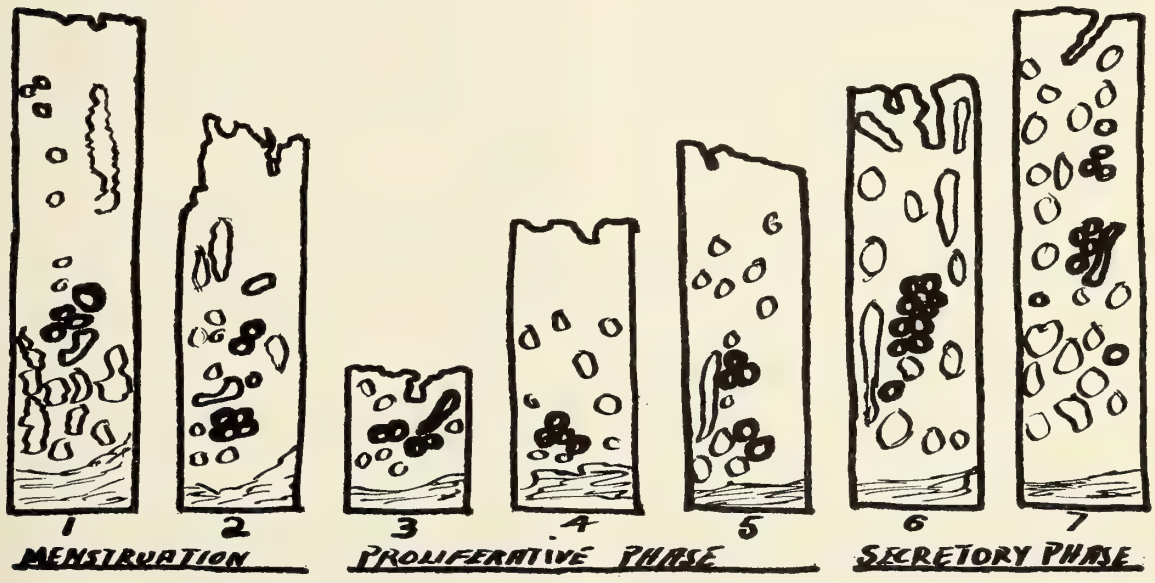



Fig. 2. Line drawings showing location of endometrial plands and arterioles seen in sections of the endometrial rhesus monkeys. (1) first day of menstruation; (2) second day of menstruation; (3), (4) and (5) early and late proliferative stage; (6) midsecretory phase; (7) Premenstrual endometrium.

Concerning corticoid activity Smith reports a drop in the serum diastase premenstrually and it is thought that this reflects increased adrenal activity. Davis reports that there is a consistent fall in the circulating eosinophils at ovulation; and, that the counts remain lower during the luteal phase in comparison to the follicular phase. Whether these truly reflect increased adrenal activity still awaits clarification.

It is seen that estrogen is present throughout the cycle; and, progesterone, only during the last half of the cycle. These two hormones act upon the endometrium of the uterus resulting in specific histological changes. The sexual cycle can, therefore, be divided into various phases depending upon the histological picture of the endometrium. (Fig. 2) The usual division given is:

(1) Follicular phase

The glands are convoluted and corkscrew-many mitotic figures. The stroma is dense. The height of the endometrium is 1 mm. thick.

(2) Early luteal phase (secretory endometrium)

The glands are convoluted and corkscrew-like in appearance. The height of the mucosa is increased. The stroma is deciduous.

(3) Late luteal phase (premenstrual endometrium)

Glands are highly developed and convoluted. Height of the endometrium reaches the maximum of 5 mms. Some 24 to 48 hours before menstruation takes place, there is a regression of the endometrium and the height is decreased to approximately 3 to 4 mms.

(4) Menstrual endometrium

Only the basal layer of the mucosa remains. The rest of the endometrium has desquamated.

The above is the usual description given of the endometrium during the menstrual cycle. Due to recent work in the field of chemical histology, the location and control of cellular enzymes will soon have to be added.

Wislocki has shown that alkaline phosphatase is encountered irregularly during the sexual cycle in the cervical glands and the surface epithelium of the cervix; acid phosphatase is present throughout the cycle.

Atkinson has shown that during the phase of endometrial proliferation and the early secretory phase, alkaline phosphatase activity is great. During the late secretory phase, there is a marked reduction in enzyme activity. Premenstrually there is little or no enzyme activity. In ovariectomized mice treated with various steroid sex hormones, estrogen has been established as the controlling hormone. Both the appearance and quantity of the enzyme responds to the quantity of estrogen administered. These studies localized alkaline phosphatase in the endometrium and established its hormonal control; however, they do little to elucidate its function in the physiology of the uterus.

Estrogen has numerous morphological and physiological effects on uterine tissue. One of the most striking of these is the promotion of endometrial growth especially marked during the proliferative phase of the menstrual cycle. Since growth processes are generally accompanied by increased protein synthesis, the concomittant increase in alkaline phosphatase suggest a functional relationship between the two. Similarly, the appearance of the enzyme and the deposition of glycogen with the disappearance of the lipoids may be a significant relationship.

Meyer has shown a direct relationship between progesterone formation and the quantity of succinic dehydrogenase and alkaline phosphatase that is present in lutein cells of the corpus luteum. He also shows that adenosine tryphosphatase might play a role in the maintenance of lutein cells. All these enzymes function ultimately in providing a favorable intrauterine environment.

Since menstruation is the termination of a normal sexual cycle in which fertilization has not taken place, it has been first necessary to discuss the various component factors which control and take part in the sexual cycle.

There are two main theories regarding the cause of menstruation. One based upon the vascular pattern of the endometrium. The other is based upon the fact that menstrual discharge contains a potent toxin. Both of these theories state that hormonal withdrawal is the activating factor percipitating menstruation.

First we will consider hormonal withdrawal

as the precipitating factor. The observation that corpus luteum regression coincided with menstruation was largely responsible for the assumption that menstruation is precipitated by loss of some substance or substances secreted by this structure. However, since both estrogen and progesterone are secreted by the corpus luteum, it could be either one or both of the hormones.

That estrogen withdrawal was the cause of menstruation was suggested by the observation that bleeding followed bilateral oophorectomy when neither ovary contained an active corpus lutem. Also the menstrual bleeding that takes place in an anovulatory cycle favors the estrogen theory, for here nothing but estrogen has acted upon the endometrium.

The fact that bleeding can be induced in a castrated female by treatment with estrogen and then abruptly letting the level fall to the so-called bleeding threshold, favors the assumption that estrogen is the controlling hormone. However, this theory has been questioned for estrogen is formed throughout the cycle and is present in large amounts in the body fluids. In spite of this, menstruation takes place. Furthermore, during protracted estrogen therapy administration in the macaque, one or more bleeding episodes occur despite a constant supply of estrogen.

The role of progesterone is difficult to evalate; for, before it can be effective, the endometrium has to be prepared by estrogen. There is a natural antagonism between the two; for, estrogen promotes mitosis and progesterone promotes function. One or the other must dominate the cells.

The fact that progestrone can delay bleeding whether or not the mucosa has been subjected to estrogen; and, that large doses of estrogen fail to delay menstruation, when given during the luteal phase, seems to imply that progesterone withdrawal is the key hormone.

Another point in support of the progesterone theory is based on the results obtained by Wat-

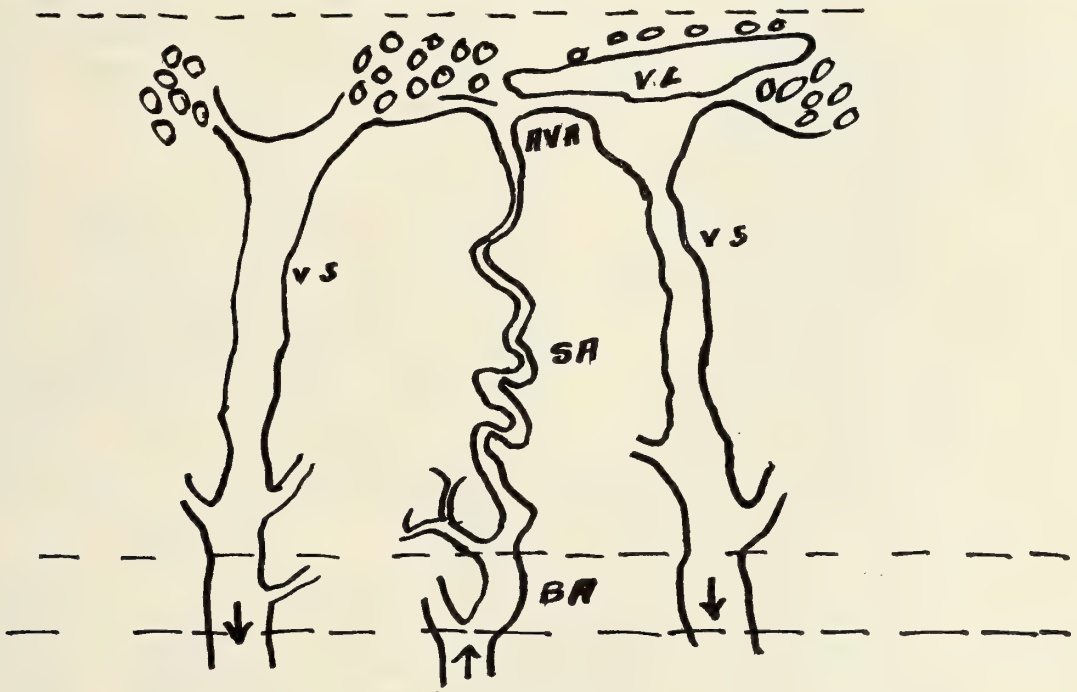



Fig. 3. Diagrammatic representation of the vascular pattern of the human endometrium, according to Okkels, Schlegel and Dalgard.
Legend: VL—venous 'lake"
AVA—arteriovenous anastomosis
VS—venous collecting stems

son and McHenry. They injected a castrated monkey with estrogens and followed this by progesterone. The bleeding which followed was associated with necrosis which was limited to the epithelium of those glands fully activated by progesterone and to the stroma surronding them.

The above observations indicate that the menstruation which takes place in a normal sexual cycle is due to progesterone withdrawal; and, to a lesser extent, estrogen withdrawal.

Before considering the vascular theory of menstruation, one must realize that the amount of bleeding varies from the microscopic bleeding of some species of New World monkeys to the profuse hemorrage of the human. Unlike the human, the species with microscopic bleeding do not possess coiled or spiral arteries. The amount of bleeding that takes place varies with the vascular structure of the endometrium. This in turn being a difference in species which has evolved through the needs of the various organisms in furnishing a suitable endometrial bed for nidation. Thus, in the human, a bed with a rich blood supply is needed and developed for the growth of the invading fetal chorion. A complex vascular structure is furnished and when fertilization does not take place, it is dismantelled and rebuilt for the next ovulatory period. With the dismantelling, menstruation takes place.

The vascular theory of menstruation is based on the fact that menstruation is fundamentally a vascular phenomenon in which the endocrines play an underlying role. The anatomy of the vascular bed, and the fact that the blood vessels are responsive to regulation of a specfic nature favor such a theory. A summarized description of the generally accepted views of the static angiology of the endometrium follows. (Fig. 3).

From the radial arteries of the inner third of the myometrium, the endometrial spiral arteries arise. They pursue a coiled course all through the endometrium. They give off very few branches in the mucous membrane and they fork out near the surface epithelium into terminals which in turn dissolve into capillaries of the superficial layers. The outer diameter of the spiral arteries is between 50-100 microns; their walls are from 15-30 microns thick. Basal arteries are given off from the spirals near the myo-endometrial border zone. They branch out in a dichotomic manner and they supply the basal layers of the endometrium.

The veins from a glandular and interstitial plexus. In the functional layer, sinus-like distentions are formed from which venous stems proceed parallel to the glands. These stems run at a certain distance from a corresponding spiral artery. They empty their blood into the larger plexus of the myo-endometrial border zone.

A more detailed study of the endometrial blood vessels, phase for phase, during the complete cycle is given below. It is taken from Hasner's *The Vascular Cycle of the Human Endometriur.*

(1) Early proliferative phase

In this phase, the spiral arteries reach the surface. The arterial wall is thin; the calibre is small. There is rapid proliferation of glands and stroma. The proliferation of the arteries is less pronounced. The capillaries run parallel with the surface. A development of intestitial and glandular capillary networks is in evidence. The veins, too, run parallel with the surface. They unite into venous stems—taking a course at right angles with the surface.

(2) Late proliferative phase

In this phase, the spiral arteries increase in length. They reach the surface epithelium; and, here, they may turn and, for a short distance, run parallel with the surface. Adventitial tissue and whole columns are formed consisting of a coiled artery with its surrounding connective tissue. The capillary bed is now definitely built up as a glandular network. The important feature of this phase is, however, the veins. The venous stems dominate the picture. Their number increases. The walls become thicker.

(3) Early secretory phase

In this phase, spiral arteries increase in length and their terminal branches are coiled slightly. Lower down in the endometrium, the arteries become intensely coiled. Around the arteries and columns of connective tissue, the stroma assumes a loose and edematous structure. The capillaries show some distention with resulting stretching of the endothelium. The veins are even more distended and larger venous stems dominate the picture. There is a reduction of the glandular plexus and a number of sinus like expansions may

be found. These develop into venous lakes whose vascular wall is very thin because of the stretching.

(4) Late secretory phase

In this phase, the edema of the stroma is extensive. The arterial walls are now reduced and their coiling decreases. The spiral arteries undergo degenerative changes. The endothelial cells are swollen. In the capillaries, also, the endothelial elements are swolen. Permeability of the capillary wall is effected because exudation of fibrin is observed around the capillary tubes. A similar degree of exudation is found around veins. Infiltration by numerous leucocytes and plenty of blood extravasates are in evidence in superficial layers. Venous lakes are still further developed.

(5) Menstruation

The spiral arteries during menstruation must be considered separately according to the state of endometrial desquamation. In the desquamated parts the spiral arteries jut out from the lacerated surface, but they are closed by a small covering clot. In the nondesquamated regions the arteries are less coiled, their outer diameter is reduced, and in places show circular con-

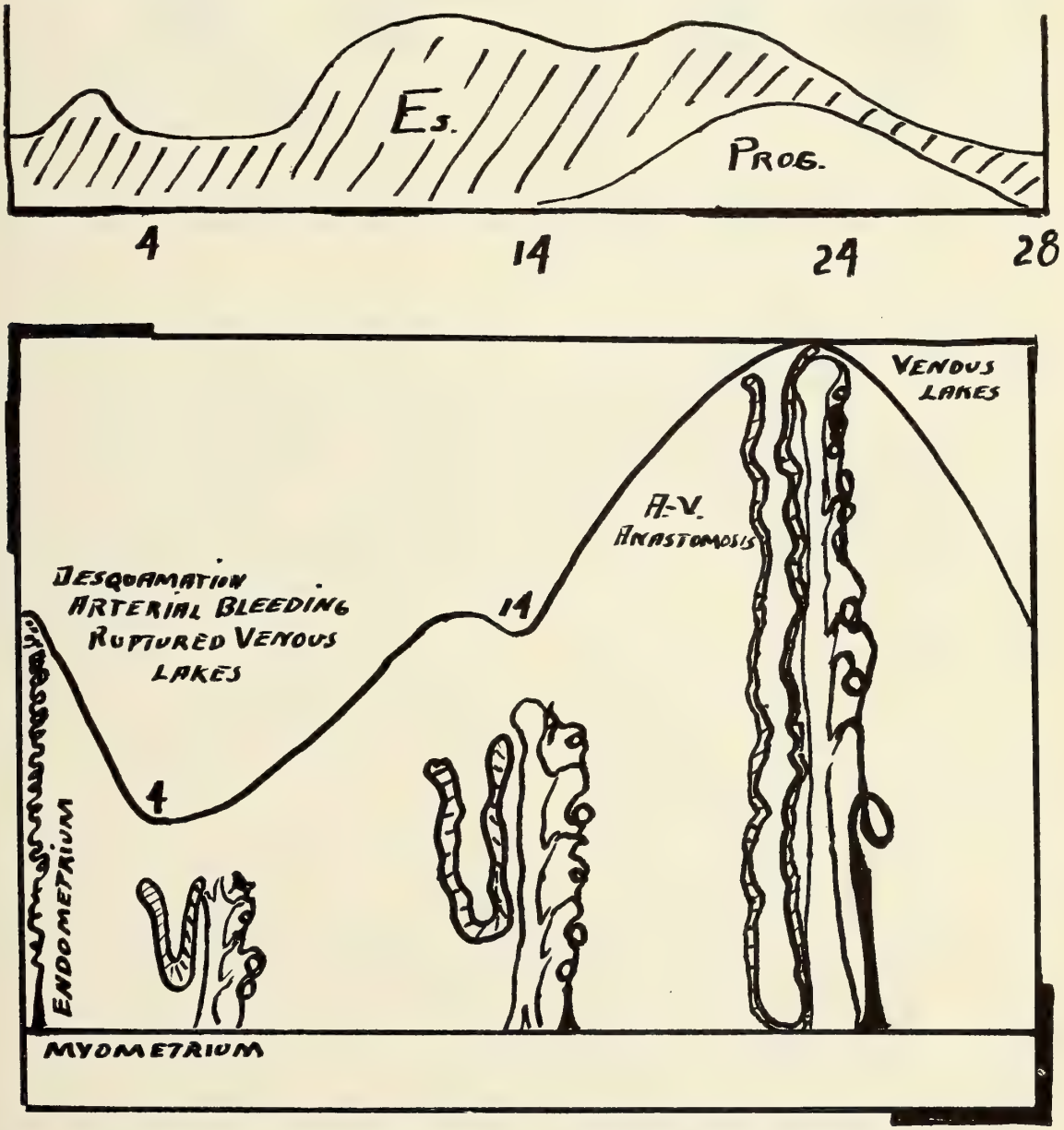



**Fig. 4. Schematic representation of the relation of cyclic vascular changes in the uterus to the chief hormonal factors with which these are associated.**

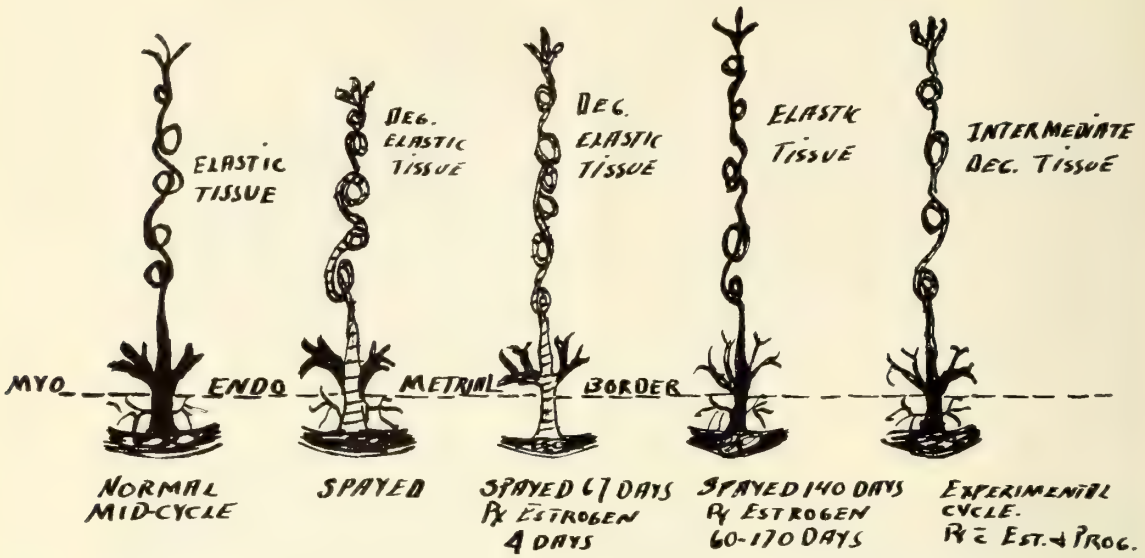



Fig. 5. Schematic representation of the different susceptibility of the uterine arteries and arterioles to prolonged estrogen deprivation. The cross hatched areas signify fibroelastoid hyaline degeneration of elastic connective tissue. Note that only the coiled and radiate arteries are affected and that prolonged treatment with estrogen is necessary for restoration of the elastic tissue. Based on the work of Okkel sand Eagle.

traction bands. The capillaries during menstruation show extreme distention in the entire superficial layer. Here, again, the vascular walls show endothelial swelling and degenerative features. Numerous capillaries open into uterine cavity. Analogous findings are made in the venous plexuses. Here the vascular walls are profoundly altered with necrobiotic phenomena in many places.

(6) Regenerative phase

Characterized by disappearance of edema in remaining parts of the stroma. The spiral arteries have a typical coiled aspect and they still reach the surface. The adventitial layers are once again well defined. The capillary walls in regeneration are well defined. The endothelium is budding off new cell groups. There is reduced capillary congestion. All over the surface epithelium quickly covers the lesion.

The outstanding point is the degree of vascular degeneration and the rapidity of repair which takes place in the vascular tree of the enodmetrium. That this can be caused by changes in equilibrium of the sex hormone is suggested by the work of Okkels and Engle which shows that arteries are responsive to estrogen depravation. Local specific metabolic products have to be considered as a causative factor. (Figs. 4 and 5).

It has been observed that menstruation is preceded by a period of superficial ischemia of the enodmetrium, and the effects of this ischemia upon the vessel structure have to be considered.

It is assumed that the immediate cause of the vascular alteration must be something that affects local circulation; and, thereby, leads to disturbances of nutrition and oxygenation. These may be caused by a local anemia or by a specific metabolic product which may be formed locally as a result of changes in the rate of blood flow. Such local disturbance may also be caused by hormonal disequilibrium.

According to Markee, the regression of the endometrium causes increased coiling of the spiral arteries. This in turn, causes increased resistance to the flow of blood with resulting stasis and vasodilation; thereby causing the local ischemia observed.

Keiffer reports that venous hearts with valvular and contractile modifications of venous walls is the cause of the ischemia. Daron states that it is the result of constriction of the spiral arteries. Westman believes that it is due to myometrial activity with increased contractions

resulting in stasis and venous congestion. Schlegal and Dalgard believe it to be due to the arterio-venous anastomosis with a bypassing of a superficial capillary bed.

Certain facts do not substantiate the assumption that superficial ischemia is the key factor in menstruation. One of these is the observation that vasoconstrictor substances fail to induce menstruation. The other is the failure of castrated monkeys to menstruate when receiving a constant supply of estrogen, despite an ischemia of the entire uterus which was produced by ligating both ligaments.

Reynolds, Wislocki and Dempsey have observed that the lymphatic drainage is very scant in the upper layer of the endometrium, and that this leads to an inability to properly carry away the exudation. This results in congestion and ischemia. This is true for those primates which do not depend upon the coiled arteries for their menstruation. More work has to be done on this theory, for it is a rather recent observation.

The theory of menstruation which is advocated by the Smiths maintains that a menstrual toxin causes menstruation. They state that the proper shedding of endometrium takes place when the toxin effectively causes explosive deterioration of endometrium and occurs only when estrogen and progesterone are withdrawn. Investigation has shown that the toxic factor is an atypical euglobulin. This factor is present in the blood stream during menstruation but not between menstruation. They maintain that the menstrual toxins cause generalized tissue and pronounced vascular damage.

However, Menkin has reported on a toxic factor which he calls "necrosin." Necrosin was developed by irritating the peritoneum of dogs with turpentine. It has a very close similarity to the menstrual toxin; for, serum of a rabbit immunized against the menstrual toxin precipitates canine "necrosin" and vice versa. Apparently, they are identical protein factors. Thus, the menstrual toxin is more likely to be a nonspecific reaction to necrosis—the result of necrosis and not the cause of it in menstruation.

After considering the physiology of menstruation, two basic facts stand out: (1) that estrogen and progesterone build up the endometrium (2) That, with withdrawal of these hormones all structural elements of the endometrium disintegrate.

**BIBLIOGRAPHY**


Adam, G. S.: M. J. Australia. 1:727 (May 13) 1939.

Best, C. H., and Taylor, N. B.: The physiological basis of medical practice. 4th ed. Baltimore, Williams, 1945.

Dalgaard, J. B.: Acta Obst. & Gynec. Scandinav. 26:342, 1946.

Daron, C. H.: Am. J. Anat. 58:359, 1936.

Engle, E. T., ed.: Menstruation and its disorders. Proceedings of the conference held under the auspices of The National Committee on Maternal Health. Springfield, Ill., Thomas, 1950.

Grollman, Arthur: Essentials of endocrinology. 3d ed. Springfield, Ill., Thomas, 1947.

Hoffman, J.: M. Clin. North America. 32:1485, 1948.

Kane, H. F.: Virginia M. Monthly. 62:19, 1935.

Markee, J. E.: Contrib. Embryol. 28:219, 1940.

Meyer, R.: Am. J. Obst. & Gynec. 51:39, 1946.

Novak, Emil: Gynecological and obstetrical pathology with clinical and endocrine relations. 2d ed. Philadelphia, Saunders, 1947.

Reynolds, S. R. M.: J.A.M.A. 135:552, 1947.

Selye, Hans: Textbook of endocrinology. Montreal, Acta Endocrinologica, 1947.

Smith, O. W. and Smith, G. V. S.: J. Clin. Endocrinol. 6:483, 1946.

Watson, M. C., and McHenry, E. M.: Am. J. Obst. & Gynec. 35:316, 1937.

Wislocki, G. B., and Dempsey, F. W.: Anat. Rec. 75:341, 1939.

# PHOENIX Clinical CLUB

## MASSACHUSETTS GENERAL HOSPITAL CASE NO. 17492

**The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.**

An American chauffeur of thirty entered on April 28 in coma, the history was given by the wife.

On April 25 he "caught cold." The next day he felt ill. On April 27 he had blurred vision. After working only a few minutes that morning he was brought home and went to bed. He complained of headache and of tingling, first in the left foot and arm, later in the whole left side, then in the right arm. He complained of severe pain in the back, then became comatose, frothing thick mucus from the mouth at first. He had several severe chills during the first part of the night and was stuporous all night. His wife thought he was not paralyzed. He moved his left leg. In the morning his condition was much worse.

His father and mothed both died of tuberculosis. There is no history of familial disease.

The past history is negative except that for the past six months he had slept all the time when not working or eating, and had been unusually irritable and rude.

Clinical examination showed a desperately sick man in extreme respiratory distress and deep coma. The skin was pale, hot and moist. The mucous membranes were moderately cyanotic. There were blisters on both ankles. There was very marked pyorrhea and dental caries. The respiration was very rapid. The chest was filled with bubbling rales, with slight impairment to percussion and distant breath sounds at the left base. The heart and abdomen were normal. The muscles of the right hand showed atrophy. All the reflexes were hyperactive. There was Babinski on the left and slight poorly sustained bilateral ankle conus. The pupils and fundi were normal.

Urine examination showed a specific gravity of 1.035 and a large trace of albumin at one of two examinations. Blood examination showed 31,800 to 17,200 white cells, 90 per cent polynuclears, 4 per cent eosinophils, hemoglobin 80 per cent, reds 5,000,000 smear normal. The carbon dioxide combining power was 51 per cent. A Hinton test was strongly positive.

The temperature was 104.5° to 109°, the pulse 115 to 122. The respirations were 37 to 35.

X-ray examination showed the diaphragm normal in outline. The lung fields were clear. There was some prominence of the lung markings.

The visiting physician noted, "The breathing suggests laryngeal or tracheal obstruction. He will develop some sticky sputum by cough and then breathe more easily for a bit. The lungs are resonant throughout, without bronchial breathing anywhere. The tracheal noises are transmitted everywhere. . . . Lumbar puncture was discussed and decided against as in a moribund patient an unjustifiable procedure."

A throat consultant found no evidence of membrane or follicular spots in the nose, throat, pharynx or larynx. here was a profuse amount of mucopus brought up from the bronchi. The upper tracheal rings showed reddening only. There was no evidence of tumor or vocal cord paralysis.

A surprising factor in the case was the rapid and extraordinarily deep respiration, suggesting acidosis, which was not present.

The patient went rapidly downhill from admission. Oxygen tent, intravenous glucose and supportive treatment were without result. The temperature rose steadily to 109°. The patient died of respiratory failue on the afternoon of admission.

DR. C. B. WARRENBURG:

A summary of the history and physical of

case no. 5 that we are considering today is as follows.

An American chauffer, age 30, entered the hospital one morning in coma and died that afternoon. He had been ill only 3 days. His illness began with a cold. The following day he felt rather sick and the second day of his illness, he noticed blurring of vision, and after working only a few minutes, he was brought home and put to bed. His complaints then were headache, tingling in the left foot, left arm and later in the whole left side, and then in the right arm. He complained of severe pain in the back, and then became unconscious; frothing thick mucous from the mouth. He had several chills during the first part of that night and was stuporous all night long. His wife thought he was not paralyzed because he moved his left leg. The morning of the day of admission he was much worse.

His mother and father both died of tuberculosis.

The patient's past history is negative except that for the past 6 months he has slept all the time when not working or eating and has been unusually irritable and rude.

Examination of the patient revealed a desperately sick man in extreme respiratory distress and a deep coma. The skin was pale, hot and moist. The mucous membranes were moderately cyanotic. There were blisters on both ankles. The respiration was very rapid and the chest was filled with bubbling rales and there were distant breath sounds at the left base. The heart and abdomen were negative. The muscles of the right hand showed atrophy. All reflexes were hyperactive. There was a positive Babinski on the left and a slight, poorly sustained bilateral ankleclonus. The pupils and fundi were normal.

The urine showed a specific gravity of 1.035 and a large trace of albumin on one examination. The blood showed 31,800 to 17,200 while cells; 90% polys; 4% eosinophiles; Hb 80% with 5,000,000 reds. The smear was normal. The $CO_2$ combining power was 51%. A Hinton test was strongly poistive. The temperature was 104.5 to 109. The pulse, 115 to 122. The respirations were 37 to 35.

X-ray examination showed the diaphragm normal in outline. The lung fields were clear. There was some prominence in lung markings.

The patient would develop sticky sputum and after coughing would be able to breathe more easily for a short while. The suggestion of tracheal obstruction was present. The lungs were resonant throughout without bronchial breathing anywhere. The tracheal noises were transmitted everywhere. Lumbar puncture was discussed and decided against, as in a moribund patient an unjustifiable procedure. A throat consultant found no evidence of membrane or follicular spots in the nose, throat, pharynx or larynx. There was a profuse amount of mucopus brought up from the bronchi. The upper tracheal rings showed reddening only. There was no evidence of tumor or vocal cord paralysis.

A surprising factor in the case was the rapid and extraordinary deep respiration suggesting acidosis which was not present.

The patient went rapidly down hill from admission. Oxygen tent, intravenous glucose, and supportive treatment were without results. The temperature rose steadily to 109° and the patient died of respiratory failure on the afternoon of admission.

This patient obviously had an acute fulminating infection of some sort and the brain and its meninges are apparently the seat of the infection. Some of the prominent symptoms in this case point to the chest and it is noted that large amounts of muco-pus are brought up. In one part of the protocol, it is noted that moist rales are present everywhere. Later on examination of the chest reveal no moist rales according to the protocol. Oddly enough, x-ray of the chest revealed no abnormalities. It is understandable, however, that with respiratory rate of 35 or more a proper x-ray of the chest may be well nigh impossible.

The patient's illness began with an acute upper respiratory infection and rapidly developed into a fatal illness. The symptoms and findings with a few exceptions are classical for a Waterhouse-Friederickson Syndrome. However, those few exceptions make such a diagnosis questionable. The exceptions are, first, the temperature rise as high as 109 is unusual in a fulminating meningo-coccemia, and second, the absense of rash which is very characteristic of this disease. But

the rapid onset with cold, the coma, the characteristic blood count, and the fatal ending make it necessary to give such a diagnosis consideration.

A tuberculous meningitis may under rare circumstances present a picture similar to this patient. However, the only suggestion of tuberculosis is that both parents died of the condition, and there is no evidence that our patient ever had the disease. We must consider the fact that the history in this case, however, is probably extremely unreliable because the patient was unable to present any of it himself due to his coma. All material in this protocol was obtained from the history as given by the wife.

The patient had a strongly positive Hinton test and although this may be the so called "red herring" because people can die of other things while having syphilis, it is also true that syphilis can mimic any other disease. It is felt that if a spinal fluid test had been run, the diagnosis would be clear in this case and it is difficult to understand why a spinal tap was not done, even though the patient was moribund. Because the symptoms were obviously meningeal a spinal tap with the release of increased spinal fluid pressure may very well have improved the patient's condition, at least temporarily.

In considering this patient's past history, we find one very important fact, namely, that for the past 6 months, this patient has had personality changes and somnolence to an extreme degree. These are suggestive of chornic brain degeneration. On physical examination, atrophy of the muscles of the right hand were found. This also suggests chronic central nervous system involvement. I am sure that if this patient could have given a clear, lucid history himself, the diagnosis would be far more obvious than it is at the present moment.

Meningovascular neurosyphilis is an involvement of the membranes and the vessels of the nervous system by the treponema pallidum with or without secondary involvement of the nervous parenchyma. The symptoms of this disease vary greatly according to the location and extent of the lesion, the relative severity of the meningeal and vascular changes, and the extent of the pathological process.

In a period beginning 6 months to a year after the primary stage, severe meningovascular disasters including meningoencephalisis occur with relative frequency. The meningitis may be either cerebral or spinal. A palsy of one or more of the cerebral nerves may develop which is fleeting and disappear in a few days or may be permanent. Headache, dizziness, and visual and auditory symptoms are often noted. The vascular disorders of this condition are the most dreaded complication of the early period. Thrombosis of one of the large meningeal or cerebral vessels is not infrequent. The sylvian and leniculostriate arteries are particularly susceptible to this lesion. This results in a hemiplegia. These apoplectic conditions often come without warning or on the contrary, the patient may awake after a few days of headache and dizziness to find himself paralyzed. The paralysis is the result of a destruction of brain tissue due to shutting off of blood supply. Although this condition usually develops during the first 5-7 years after infection, the syphilitic patient is susceptible to such manifestations of meningovascular syphilis throughout life. Although the prognosis of this condition is better than that of any of the other types of the disease, no general statement can be made because there are so many different manifestations of the condition and the changes vary so greatly in the different stages.

It is our feeling that this patient had a chronic meningovascular neurosyphilis with a breakdown of some sort that gave the acute fulminating meningitis that ended in his death within 3 days. The rupture of an aneurysm of one of the cerebral vessels is a very distinct probability and would fit in with this picture as presented. But in addition, the pathological examination of the brain must undoubtedly show evidence of chronic brain damage. The second diagnosis is acute fulminating meningococcemia or the Waterhouse-Friederickson Syndrome.

## CLINICAL DISCUSSION

By Maurice Fremont-Smith, M.D., Tracy B. Mallory, M.D. and Arvid Lindau, M.D.

### Notes on History

Dr. Fremont-Smith: Pneumonia sometimes has an onset of extreme rapidity, so that the patient is well in the morning and by night is in coma.

I suppose it is quite possible that the coma is due to a sudden increase in intracranial pressure, i.e., meningismus. I do not know whether it is always due to that or not. It may also be due to the toxin of pneumonia.

The blurred vision that came on the day before he was taken here is of course a very important symptom. We associate it with nephritis or with increased intracranial pressure.

Of course we may be dealing with a cerebral accident; the sudden onset and the blurred vision make one think of that possibility. There we have tingling and numbness, first in the left foot and arm, later on the whole left side, which makes one think of a right cerebral lesion behind the motor area in the sensory area. We find it later in the right arm. That gives us a good deal about localization. It requires a hemorrhage that is very large to involve both those areas. Of course we are dealing with the brain. We know we are not dealing with cord alone because he has cerebral symptoms. A lesion on one side of the brain is compatible with life. Where we have disturbances of both sides it implies that the lesion extends over the brain from one side to the other. Usually under those conditions the hemorrhage is so great that it causes death. Consequently we hesitate to say cerebral hemorrhage here. If this is a vascular accident it is more likely to be thrombosis, although there again we have the same difficulty. The thrombosis must be a very large one. We will ask Dr. Mallory whether thrombosis could involve the sensory areas on both sides.

Dr. Mallory: It hardly seems possible.

Dr. Fremont-Smith: This man is thirty years old. He is very young for either hemorrhage or thrombosis. So I am so far quite in the dark.

He had severe pain in his back, besides the other symptoms. Perhaps the best way to put that all together is to conceive of a meningitis of sudden onset with increased intracranial pressure, with blurring of vision, with involvement of the cortex of the sensory area. Yet of course with meningitis headache is usually far more prominent than backache. In mild meningitis such as we see in poliomyeltis sometmes the patient has more back pain than head pain.

The frothing of mucus might imply that the ninth and tenth nerves were involved or it might be due to difficult in swallowing mucus resulting from the fact that he was so comatose that normal stimulus to deglutition was not effective.

This whole picture of the present illness could come from another type of vascular accident, that is subarachnoid hemorrhage. Subarachnoid hemorrhage comes on in early youth, even at the age of fifteen. The onset is very sudden usually, more sudden than in this case, although I suppose one could conceive of a small leak. Almost always subarachnoid hemorrhage begins with severe headache and stiff neck; later if the hemorrhage is large enough there are signs of increased pressure resulting in coma, sometimes death—and sometimes recovery.

There is one thing I have learned through personal experience and that is that one has to be very careful in draining the spinal canal in subarachnoid hemorrhage. One does a lumbar puncture and finds bloody fluid with increased pressure . One should lower the pressure, but not too much. A very good rule is to bring it down one-half, and six hours later bring it down one-half what it was the second time.

His father and mother both died of tuberculosis. Could this be tuberculosis. No tuberculous meningitis begins as suddenly as this. The characteristic onset is very slow. In a child there is usually lack of appetite, some headache and change in character. The child is not very sick at first. Then gradually over a period of days or a week or two the picture becomes more definite. This is not the picture of tuberculous meningitis, and I cannot think of any other form of tuberculosis which this could be. Could he be suffering from one of the other causes of coma? We have spoken of nephritis. That still has to be kept under consideration. Could it be diabetic coma? I do not know of any facts on which to base the diagnosis. In diabetic coma pain, headache and blurring of vision are not characteristic. I should say they do not occur.

For the past six months the patient had slept all the time when not eating and had been unusually irritable and rude. That gives us a hint. Evidently this trouble did not start three days before admission; it started six months ago. We can very easily fit that in which the present

picture, supposing he had a tumor, and supposing that was growing very slowly and giving very little evidence of its presence. We all know that a tumor can grow to large dimensions in a silent part of the brain causing no symptoms. The first symptom may be a sudden attack of convulsions. When we see a patient with sudden onset of convulsions one of the things to think of is brain tumor. Or there may be a period of rapidly increasing coma. What happens under those circumstances? Either there is hemorrhage into the tumor or the tumor presses on some area which prevents the normal flow of spinal fluid, resulting in sudden increase in intracranial pressure. This is not an acute meningitis. I may very well be a picture of tumor with sudden hemorrhage or blocking.

I should like to know more about his respirations, whether they were Cheyne-Stokes in character or whether they were very deep and full such as on might find in acidosis.

The skin was hot and moist. The skin in diabetic coma is dry. The skin of an insulin shock patient is wet.

Those blisters on both ankles mean nothing to me. Has anybody any suggestions?

A Student: Perhaps he had had mustard plasters.

Dr. Fremont-Smith: Marked pyorrhea and dental caries mean nothing in connection with this, and very little anyway, because one finds so many people who have them.

One would not expect very rapid respiration with increased intracranial pressure. That makes us think again of pneumonia. When we get pneumonia with extremely rapid respiration and air hunger we can give a poor prognosis. I have gone out to get a nurse for a patient breathing that way and have come back to find him dead.

The bubbling rales in the chest, percussion impairment and distant breath sounds at the left base may mean something or they may mean very little.

"The muscles of the right hand showed atrophy". I wonder if he was left-handed. I do not see how we can fit that in with any condition we are considering. Atrophy, if it is due to a central nervous system lesion, is due to a lesion of the peripheral neurons, to a lesion in the anterior horn cell or peripheral nerve. If this is a lesion of the head there is no possible place in the brain cortex or in the internal capsule or anywhere above the anterior horn cells that can give atrophy. Syringomyelia hits the anterior horn cell by pressure from the inside of the cord, so that we get atrophy because the anterior horn cells are thrown out. We get the same thing in poliomyelitis and in amyotrophic lateral sclerosis. We are far above the anterior horn cells if we are dealing with a brain lesion. That atrophy is also unexpained.

Of course we should not expect hyperactive reflexes with atrophy. If hyperactive reflexes are due to a central nervous system lesion and not to strychnine poisoning or other toxin or simply to the nervous make-up, they must be due to something above the anterior horn cells. We must postulate a lesion in the cortex, intimal capsule or pyramidal tract. So those two things, atrophy and increased reflexes, do not go together.

With the slight poorly sustained bilateral ankle clonus we have another reason for feeling that there is an injury to the pyramidal tract. Where is it? It cannot be in the cord alone because then we should have no cerebral symptoms. If it were in the cord one might easily have bilateral symptoms. A little compression in the cord can give bilateral symptoms, but in the head it is more difficult to get them. If we assume it is in the head we have evidence that it is chiefly on the right side because of the tingling of the left foot and arm. Why the fundi were negative it is hard to say if you assume increased pressure except that where there is increased intracranial pressure it takes time, sometimes a number of hours and sometimes a few days, before the disks become choked.

The specific gravity of the urine was 1.035. He probably had not been drinking much water during the last twenty-four hours. At one examination there was a large trace of albumin; at the other examination there was no albumin. I do not think we have to explain that on the basis of a kidney lesion. We get albumin often without any kidney lesion.

I do not know whether or not to place any reliance on the strongly positive Hinton test. I should like to. If we can it brings up one other possibility, that is an acute luetic menin-

gitis. Of course it would strengthen our feeling that he may have had a subarachnoid hemorrhage, although most subarachnoid hemorrhages are not luetic, not caused by luetic aneurysms. Has he luetic meningitis? The acute part of the disease is very acute for this disease. Of course the lumbar puncture is going to help us and I think it is fair to wait for that. Has any one of you looked up the clinical course of luetic meningitis?

I am going to base my diagnosis simply on the past history. We do not know whether the history is correct or not, but if it is true that he has been changing in character and has slept all the time when not working, that must mean something. I am going to say brain tumor.

## CLINICAL DIAGNOSIS
(From Hospital Record)

Pyrexia of unknown origin.
Brain abscess.

## DR. MAURICE FREMONT-SMITH'S DIAGNOSIS

Brain tumor.

## ANATOMIC DIAGNOSIS

Luetic meningitis and encephalitis.
Acute influenzal pneumonia.

## PATHOLOGICAL DISCUSSION

Dr. Mallory: I am not quite sure I know the whole story of this case.

We found two definite and I think entirely independent lesions. One of them was a chronic type of infection of the meninges and brain substances with a good deal of perivascular infiltration of plasma cells pretty well scattered throughout the brain substance. Lesions of the same type were found in the meninges as well, though here we found some scattered polynuclears also. There was, however, no true acute meningitis.

The other striking feature of the case was the lungs. All five lobes of both lungs were greatly enlarged, extremely edematous and hemorrhagic. No lobe was entirely consolidated and yet no lobe was of normal consistency. A great many alveoli appeared in gross to contain a hemorrhagic, very thin fluid exudate. On gross examination I did not feel sure whether it was pneumonia or not. When it came to microscopic examination we found that throughout the lung there was a hemorrhagic and serous exudate in the alveoli; almost no leukocytes, no fibrin. The alveolar walls showed a pecuiar hyalin necrosis which is very characteristic of and I think probably pathognomonic of the so called influenzal pneumonia. This man died last April. During a period of four weeks then we had five cases with this same type of pneumonia. There were no cases in the preceding twelve months and there have been none since. Clinically there was typical influenza in the city at that time.

Cultures from the lung showed non-hemolytic streptococcus and no influenza bacilli. I had expected that we should at least find a hemolytic streptococcus.

Blood cultures and cultures from the meninges were negative. Dr. Kubik felt that the brain lesions were probably those of a chronic, slowly progressive luetic meningitis. They certainly antedated by weeks or months the acute pulmonary elsions.

I think we have to make two diagnoses, luetic meningitis and encephalitis with acute influenzal pneumonia as the terminal event.

Dr. Fremont-Smth: It is interesting that the x-rays showed nothing at all in the lungs.

Dr. Mallory: I should expect that from the appearance of the lungs at autopsy. Every lobe was involved and yet no area was really consolidated. There was none of the thick fibrin and leukocytic infiltration one gets in pneumococcus pneumonia.

A Student: Was there any lesion in the brain that would account for the high temperature?

Dr. Mallory: No single definite lesion certainly. I should be a little inclined to connect the temperature with his influenzal pneumonia rather than with the meningitis, which was apparently a chronic affair and had not really troubled him much until this last illness. One very atypica thing about it was his white cell count, if it really was influenzal pneumonia. A white cell count of 30,000 is very unusual.

Dr. Fremont-Smith: What would lumbar puncture have shown if it had been done?

Dr. Mallory: I think it would have shown a few lymphocytes. There was very little exudate in the subarachnoid space, none in gross, only on microscopic examination.

Dr. Lindau: I wonder if there were any hemorrhagic lesions. That is most usual in influenzal encephalitis. We have hemorrhagic lesions giving the well-known and easily recognized picture of purpura cerebri at postmortem. In certain epidemics as many as 30 per cent of the cases have been complicated with encephalitis (Schmorl). That is much more common complication than meningitis. About six months ago I had a section on one case in which the patient died so suddenly that we suspected he had been poisoned. I found hemorrhagic encephalitis and influenza too. There were only slight changes in the lungs. There is no correspondence between the changes in the lungs and those in the brain, because often I think the infection is so heavy and virulent that it does not stop in the lungs but we immediately get brain changes and the patient dies in a few days.

## STATEMENT ON COMPULSORY HEALTH INSURANCE BY GOVERNOR EARL WARREN OF CALIFORNIA

Governor Earl Warren of California, speaking on a CBS radio broadcast on November 4th, again advocated the enactment of a system of Compulsory Health Insurance.

Warren, three times defeated in efforts to inaugurate such a system in California, made it clear that he now favors a system of Government-directed Medical Care for all the American people.

The Governor denied that his program was Socialized Medicine, but the plan he has advocated in California closely parallels the program of Socialized Medicine advocated by President Truman and Federal Security Administrator Oscar Ewing.

The full text of Governor Warren's statement follows:

"It is not sufficient to say that America has developed the finest medical care in the world, even though this is true. We still must find a way to make it accessible to all of our people.

"*The well-to-do can pay for good medical care; the indigent receive it from public agencies and through the charitable work of the doctor; but the self-reliant worker, the man in the average or lower income bracket who contributes so much to building our country, and whose greatest ambition and hope is to raise a good American family, cannot bear the financial catastrophe of serious illness.*

"I have advocated for California a program of pre-paid medical care as a possible solution. The proposal has been called socialized medicine by some who are opposed to it. It even has been given the ugly name of communism by others. It is neither. Nor is it statism as practised in Germany or socialism as practised in England.

"I have never been and am not now in favor of socialized medicine. I do not believe in socialism, but I do believe in social progress, which has been the hallmark and the glory of the American nation from its beginning.

"*I am convinced we will enter upon a new era of progress in the cause of health when we make it possible for every one of our people to protect himself and his family from the economic disaster of backbreaking hospital and medical bills.*

"I believe it is the responsibility of the states to undertake to help doctors, hospitals and the public they serve in the solution of what, up to the present time, has been an insoluble problem. I have never held out my proposal as the only solution. It is my proposal until someone offers a better one.

"I am firmly of the belief, however, that our American system is sufficiently adaptable to make possible the solution of the problem of medical care without doing violence to the political, economic or professional concept of all the people who are sincerely interested in the problem."

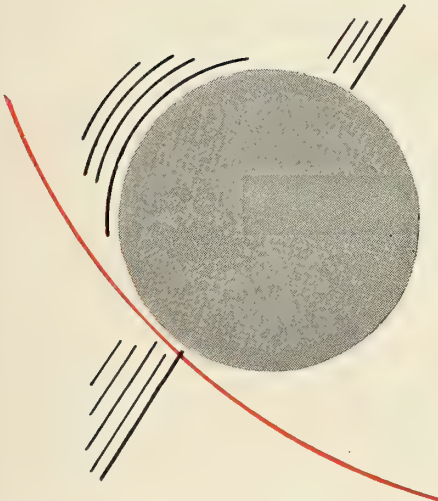


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1. Kissin, M., Stein, J. J., and Adelman, R. J.: Angiology 2:217 (June) 1951.
2. Rickles, J. A. J. Florida M.A. 38:263 (Oct.) 1951.

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SEARLE RESEARCH IN THE SERVICE OF MEDICINE

## FROM SECRETARY LULL'S LETTER

A survey conducted by the New York Times a few days ago showed the great expansion program in the history of medical education, to cost $250,000,000, is now underway in this country.

The Times surveyed 80 medical colleges and 48 state commissioners of education through questionnaires.

According to the survey, medical colleges will spend, within the next few years, $50,000,000 for laboratories, $30,000,000 for classrooms and $20,000,000 for dormitories. Another $100,000,000 is earmarked for research and special projects. In addition, the immediate cost for establishing new medical institutions will run above $50,000,000, making an over-all expansion program of a quarter of a billion dollars.

"To meet the increasing demands for more physicians and medically-trained men," the Times said, "at least 10 states have taken steps to build new medical schools or expand their two-year basic science schools into four-year institutions.

"In the current academic year—1951-52—the medical colleges admitted the largest freshman classes in recent history, a total of 7,381 . . . Despite the expansions now taking place, large numbers of qualified applicants are unable to gain admittance to any medical college in this country. Many of them seek places in foreign institutions. The records indicate that 20,000 individuals applied for admission to American medcal schools for the current college year. As many of them applied to more than one institution, the total number of applications was more than 70,000, or an average of 3.5 a student."

## A.M.A. NEWS NOTES

NOTE TO EDITORS:
AMA News Notes makes its premiere bow this month. This new monthly publication will carry up-to-date stories on what's going on around your AMA.

*President's Health Commission Requests AMA Cooperation*—A request for "cooperation" on the part of the American Medical Association in making various health and medical care statistics available to the President's Commission on the Health Needs of the Nation was approved by the Board of Trustees.

Dr. George F. Lull, Secretary and General Manager, officially replied to the Commission, saying: "It has long been the policy of the American Medical Association to permit all survey and study groups to have access to the medical data in its possession. The Board's action, however, should not be construed as implying approval of the Commission or its projected program which we believe to be of political intent."

*Gundersen Elected To Hospital Rating Post*—Dr. Gunnar Gundersen of Wisconsin, a member of the AMA Board of Trustees, recently was elected chairman of the Joint Commission on Accreditation of Hospitals. The Commission recently selected Edwin L. Crosby, M.D., as Director.

*California Group Plugs PR Plaque*—Pushing PR in its territory, the California Medical Association is attempting to lick the problems of patient-doctor misunderstanding at the grass roots. In a mailing to all its members, the California Medical Association is offering to provide every physician in its organization with a plaque, "To All My Patients," for display in his office. This plaque, designed by the AMA, urges patients to feel free to talk over questions regarding professional services and fees. Although the AMA is selling the plaque at one dollar a copy, the California society is underwriting the cost for its own members in an effort to gain wide circulation of the plaque. So far, more than 5,000 of California's 16,000 physicians have requested plaques.

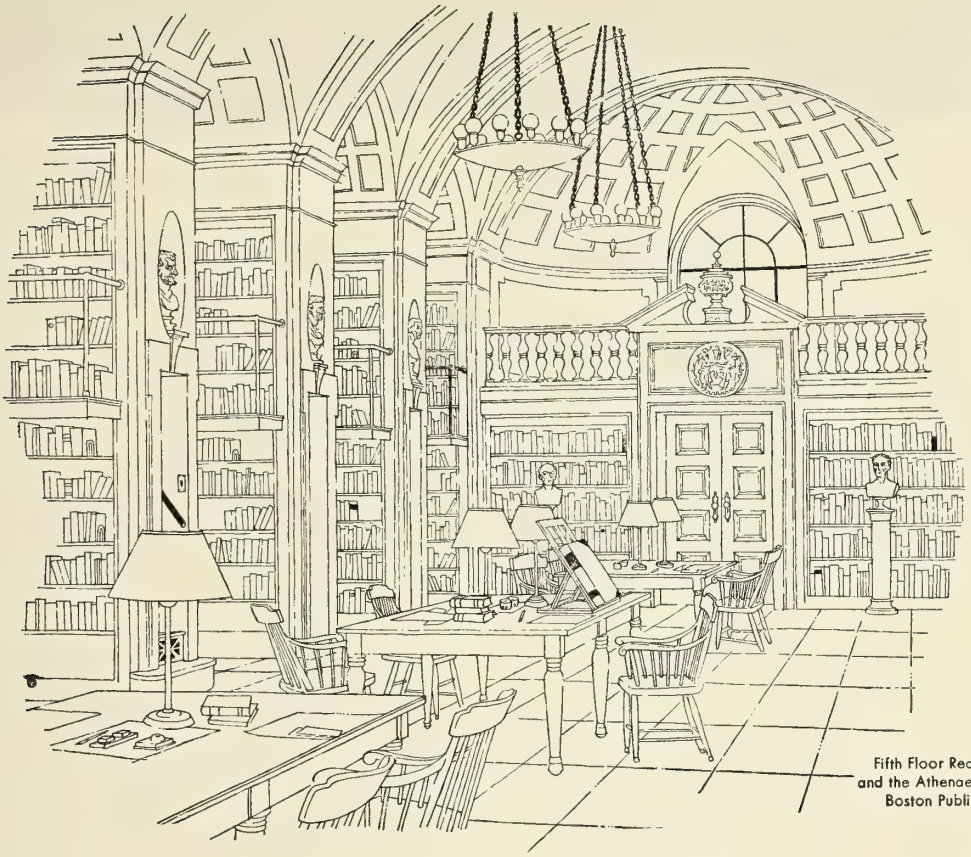
(Continued on Page 58)

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# THE *Secretary's* MESSAGE

## A GOOD DOCTOR IS A GOOD CITIZEN

THE PHYSICIAN WHO CONSISTENTLY FAILS TO ATTEND HOSPITAL STAFF MEETINGS, OR WHO TAKES NO ACTIVE PART IN THE AFFAIRS OF HIS MEDICAL SOCIETY, IS HARDLY IN A GOOD POSITION TO CRITICIZE EITHER THE HOSPITAL OR THE MEDICAL SOCIETY. BY FAILING TO MAKE HIS VOICE HEARD, HE MUST SHARE THE BLAME FOR ANY FAULTS, FAILURES OR DEFICIENCIES.

LIKEWISE, THE PHYSICIAN WHO FAILS TO *REGISTER* AND *VOTE* IS NOT IN A GOOD POSITION TO COMPLAIN ABOUT CORRUPTION, TAXES OR GOVERNMENTAL POLICIES WHICH HE FINDS OBNOXIOUS. BY FAILING TO FULFILL ONE OF THE VITAL DUTIES OF CITIZENSHIP, HE MUST SHARE THE BLAME FOR ANY BLACK SPOTS IN THE AFFAIRS OF THE COMMUNITY, THE STATE OR THE NATION.

THE RIGHT TO *REGISTER* AND *VOTE*, WHICH IS BOTH A PRIVILEGE AND A DUTY IN A NATION OF FREE MEN, WAS NEVER MORE IMPORTANT THAN IT IS RIGHT NOW. FUNDAMENTAL ISSUES WHICH TRANSCEND THE USUAL PARTY POLITICS, AND WHICH WILL AFFECT THE FUTURE OF EVERY AMERICAN, CALL FOR A CLEAR-CUT DECISION BY THE ENTIRE VOTING POPULATION. BE SURE THAT YOU PLAY YOUR RIGHTFUL PART IN THAT HISTORIC AMERICAN DECISION.

TO BE A GOOD DOCTOR – FIRST BE A GOOD CITIZEN. *REGISTER* AND THEN *VOTE*. AND OF EQUAL IMPORTANCE, SEE THAT YOUR FAMILY DOES LIKEWISE.

# Editorial

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*Journal of*
ARIZONA MEDICAL ASSOCIATION, INC.

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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.
2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. (See MEDICAL WRITING by Morris Fishbein.)
3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.
4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.
5. Submit manuscript typewritten and double-spaced.
6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.

The Editor is always ready, willing, and happy to help in any way possible.

## POLICIES AND PROCEDURES ADOPTED BY THE DEPARTMENT OF DEFENSE IN IMPLEMENTING PUBLIC LAW 779, 81st CONGRESS

At the outbreak of the Korean incident, the only source of physicians and dentists available to the military services, other than those already on duty, was the reserve components. At that time the rolls of the active and inactive reserve components of the Army could not supply sufficient medical and dental officers, particularly in the junior grades. Only a very small number of medical and dental ASTF participants had enrolled in the Army Reserve. The Navy, on the other hand, was in a much better position because the majority of the medical and dental participants in the V-12 Program were members of the Naval Reserve. The Air Force was in a position similar to that of the Army, with the expection that it was not an independent department during World War II and, therefore, had not sponsored an educational program.

To insure an adequate number of physicians and dentists to meet military requirements, Public Law 779 (the Doctor Draft Act) was enacted. Under its provisions members of reserve components were specifically exempted from registration by the following:

> "Section 4i(1) . . . No such person who is a member of a reserve component of the Armed Forces shall, as long as he remains a member thereof, be liable for registration and induction under this subsection, but nothing in this subsection shall be construed to affect the authority of the President under any other provision of law to call to active duty members and units of the Reserve Components."

The effect of relieving members of reserve components from the obligation to register exempted all participants of the Navy V-12 Program, who were members of the Navy reserve component. This comprised a large group of physicians and dentists who would have been members of the Priority I group if they had not been so exempted. Further, in the Section quoted, specific authorization to call reserve personnel to active duty is reaffirmed and this is interpreted as indicating the intent of Congress that members of reserve components be so utilized at the discretion of the President.

Extensive and earnest study was given to the most equitable and satisfactory method of bringing physicians and dentists to active duty from the increased sources that became available after the enactment of Public Law 779. It was believed, and it still is believed, that the interests of all concerned are best served by the program which was adopted and which has been

followed. It consists of assigning a priority classification, paralleling that of Selective Service, to all reserve medical and dental officers which they would have had under Selective Service had they not been exempt from registration and then calling them to active duty in accordance therewith. Thus, Priority I type reserves which includes Priority I registrants who have indicated a willingness to accept commissions are called up before Priority II's are called. It permits the Navy to utilize its reserves who were obligated to serve and it insures that the Army and the Air Force will have sufficient personnel. It also has the advantage of reducing to a minimum the necessity of actually drafting doctors by affording those who are vulnerable the opportunity of accepting commissions rather than having to face the stigma of being inducted involuntarily.

As the plan has operated, the Navy up to the present time has filled its requirements from its reserve components. The Air Force, with few exceptions, has had a sufficient number of requests for commissions and voluntary applications for extended active duty from Priority I registrants to meet its needs. Except for one month, July 1951, the Armed Forces has been able to fill its requirements for physicians by involuntarily ordering to duty Priority I registrants who have indicated a willingness to accept commissions.

You are well aware of the advantages to the interests of the national welfare in having the local and State Advisory Committees of the Selective Service System advise the military departments on the essentiality of reserves destined for calls to duty. This arrangement has proved its merit and the departments have cooperated with it in a satisfactory manner even though the obligation to do so in the cases of reserve personnel is not prescribed under the provisions of Public Law 779.

It is true that there are some recalcitrant Priority I registrants who refuse to accept commissions and are escaping duty as long as a sufficient number to meet the requirement do volunteer. Their number, however, is relatively small. According to Selective Service statistics for January 31, 1952, of an original 10,785 Priority I living registrant physicians, 1,094 remain immediately available; and of an original 3,928 Priority I registrant dentists, 620 remain immediately available. Since January 31, 1952, the available Priority I dentist pool has been reduced by the induction calls for 335 dentists in April 1952 and 175 dentists in May 1952.

When all Priority I type reserves have been called to active duty, or deferred for acceptable reasons, the Selective Service System will be requested to bring the remaining Priority I registrants into service before any Priority II type reserves are called up. It is anticipated that this will occur within the next six months; hence, the recalcitrant ones are only delaying their service until all the Priority I registrants who have accepted commissions are called up. It is a matter of opinion whether this is to their advantage. If the military emergency should cease to exist before they are inducted, they will have escaped military duty. On the other hand, if the emergency continues, they will be forced to come into service at a later date and will have to serve after their more willing contemporaries are returned to civilian life and become reestablished in their practices.

It has been the desire of the Department of Defense to comply with the intent of Public this has been done to the best interests of the Law 779. It is believed that as far as practicable individuals and of the Armed Forces.

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# TOPICS OF *Current Medical* INTEREST

## RX, DX, AND DRS.

By GUILLERMO OSLER, M.D.

The pressure for supplies of the INH drugs (isonicotinic acid hydrazides) for treatment of tuberculosis is tremendous. Hoffmann-LaRoche and Squibb are besieged by institutions, physicians, and patients for even a few pills. . . . As of April first there is almost none at large except that released to the VA Hospitals, and that which has leaked out FROM them. . . . The materials are supposed to be used strictly for research until the FDA gives approval, and a signed application for this purpose is required. The need for control and data is far greater than usual because of the premature outbreak of stories about the drugs. . . . Squibb is talking very 'poor' about the amount of supplies. H.-LaR. is optimistic. The Schering and Nepera companies have crowded in on the act by offering millions of pills to any applicants (the newspapers say), but later.

INH NEWS ITEMS,—The first cloud on the horizon is the statement that weak dilutions of INH in cultures can produce that bugaboo 'resistance' . . . The JAMA editorial reports that the drugs are bacteriocidal, rather than bacteriostatic—but several good bacteriologists say they are the latter. . . . Dr. Sevringhaus (of H.-LaR.) says that Marsilid is toxic in animals, but is less toxic than Rimifon in humans, and perhaps more effective.

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**The cleverest recent idea in medical education is the suggestion that FUNDS FOR MEDICAL SCHOOLS be obtained by using the income from doctors' medical discoveries. It has been approved by the AMA Board of Trustees. . . . This would fill a need for funds; it would avoid leaning on the guvmint; and it would make ethical the criticized but richly successful Wisconsin Alumni Research Foundation.**

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Dr. Clarence Kroeger, once assistant to Dr. Lewis Howard of the Tucson City and (Pima) County health departments, has changed California jobs. . . . Dr. Kroeger has made history as health officer in the tough Imperial County territory. He is now to become assistant health officer for Mendocino County, where a full-time department has just been established.

---

**A good clinician must never become tolerant or unaware of physical ABNORMALITIES, even among his friends or acquaintances, else he will fall on his face and no longer be a good (upright) clinician. . . . He must continuously inspect, rather than look at, the color, expression, movement, posture, etc., etc., of all those with whom he comes in contact. . . . It should be a pleasure as well as a habit, or he should take up some such remote and localized specialty as proctology.**

H. C. Wood Jr. of Philadelphia suggests that hospitals save money and serve food in better condition by having small DINING-ROOMS FOR AMBULATORY PATIENTS. There probably are reasons against the idea, but there are several others in its favor. . . . Where Dr. Wood jokingly suggests a bar to help pay expenses, we would add the charitable use of a slot-machine. (Result, e.g.,—"St. Elmo's Hospital builds a new wing without campaign for funds"!)

---

**An Arizona angle is visible in the recent report to the American Academy of Dermatology and Syphilology by Sulzberger and Hermann of N.Y.U. . . . They have found that the reason for relief from asthma, arthritis, certain skin disorders, etc., which occurs in warm dry climates is THE EVAPORATION OF PERSPIRATION. . . . Serious systemic disorders can result from a malfunction of the sweat glands in humid weather. It is like a failure of the radiator in a car. . . . Dr. Sulzberger is worth listening to, since he is a very sharp dermatologist and author.**

---

It was suggested here many months ago that a substitute arm would be a great help in training nurses (and internes and residents) in the obscure talent of GETTING A NEEDLE INTO A VEIN. . . . Now comes a report in 'Hospital Topics' of such an arm, made from a mould, containing a network of latex rubber, 'veins', and covered with a vinyl resin 'skin'. . . . The veins are constantly filled with a red liquid from a bracketted syringe, and students can palpate, aim at, and possibly hit the tubes under expert guidance . . . we suggest a post-graduate hour on 'arms' with a quarter inch of cotton padding, making it feel like 10 per cent of the real arms seem to.

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**The most fashionable 'SMOOTHAGE' FOR CONSTIPATION has recently been methyl cellulose preparations. They haven't always seemed to be the perfect material which the authors claimed. . . . Now Cass and Wolf report in 'Gastroenterology' that psyllium seed is a better laxative than other types. Thus it comes back full cycle to us old-fashioned people.**

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THE WALTER REED CENTENNIAL brought out many stories of the conquest of yellow fever and of the life of Dr. Reed. Some of them have to do with Arizona. . . . A few weeks after his marriage in April 1876, Reed journeyed from Tennessee to the southwest. His wife joined him in October at San Diego, and they travelled east in 22 days to his doctor's post at FORT LOWELL, Tucson, by doherty wagon (a military stage-coach

drawn by 4 mules). . . . The following August they were sent "by the shortest usually travelled route" to FORT APACHE, in the White Mountains. He was responsible for the health of the troops, as well as that of the settlers for miles around the post. . . . Their only child, a son Walter, (later to become a military hero and Inspector General of the Army) was born at Fort Apache. Dr. Reed left the west in 1880 for Fort Ontario, Oswego, N. Y.

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**A news-letter from Bauer & Black tells of seven general hospitals in Massachusetts and Texas with UNRESTRICTED VISITING HOURS. . . . It is said to work, but such a status is hard to imagine. It could be called a change from bedlam to chaos.**

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The non-psychiatrists among us may not know of a PROGRESS IN NARCOANALYSIS. It seems that the barbiturates may be accompanied by desoxyephedrine with good effect. . . . The patients tend to be both relaxed and alert. Material is more readily and quickly available when the combination is used. The barbiturate dosage need not be so carefully controlled and the patient remains conscious. The amnesia for the interview does not occur and the patient's recall makes the interview continuously valuable.

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**A macabre but useful vehicle is described by G. R. Knopf, in answer to a question by Dr. E. M. Bluestone in 'The Modern Hospital.' The question, —How to Camouflage a Corpse. . . . The answer is to use a double-deck cart. The body is put on the lower level, the top level is unused, and the entire cart is covered by a large sheet. . . . The vehicle can be wheeled thru the corridors, into elevators and lobbies, or wherever transit is needed, without the depressing effect caused by the usual cart.**

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One would think that chemists in general would feel a little silly about a reversal of one of their pet theories concerning oxidation. . . . It has long been accepted that paint becomes dull and chalky because of a combination of the lacquer or enamel with oxygen in the air. Now it seems that the process may be due to REDUCTION—or would you rather hear about the simple mechanism of atomic energy?

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**Typical of the confusion which exists as to WHAT AND WHEN THE PATIENT SHOULD BE TOLD ABOUT HIS ILLNESS is the article by Gallinek in the New York State Journal of Medicine. . . . He believes that the diagnosis of multiple sclerosis should generally not be revealed to the patient—yet it should be treated. . . . A needless paradox, we say. . . . Tell him of his disease, since he has to live with it. Send him to Southern Arizona, since it allows a safer life. Treat him with the best medical methods, as indicated. Let him work and be adjusted and happy—he is no worse off than thousands of others with an uncertain future.**

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A small obstruction to MEDICAL WRITING has been moved a bit, at least in Washington, D. C. . . . The 'Medical Annals' of D.C. describes a 2-day Conference on Teaching Techniques. It will give help on various aspects of medical writing, illustration, etc. . . . Such a course was once given by the Milwaukee, Wisconsin, Medical Society.

---

**Do your patients complain of being 'let down', a lack of courage, a lack of fecundity? It figures, according to the SUNSPOTS. . . . Evidence is available on the sunspot cycle for hundreds of years. The cycle is 11.2 years long, and depends on the number of spots which appear. When sunspots are scanty, your patients will complain of symptoms which fit with those named in the first sentence. . . . There was a decline during World War II; there has been a long 'high' since 1946; there is a falling index in the past year, and the effects should be noted in the next few years. . . . These data come from Santa Clara University, the Tree Ring Laboratory in Arizona, the Zurich and U. S. Naval Observatories—and a California tax survey.**

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(Continued from Page 48)

*Rural Health Makes News*—More than 500 medical and farm leaders gathering in Denver for the Seventh Annual Conference on Rural Health made news. The Conference's theme—how to help rural communities help themselves to better health—was carried not only in many newspapers and magazines but also to a large radio audience in the Denver area and throughout the midwest.

Over 35 different radio programs—arranged by the Colorado State Medical Society and the AMA Public Relations Department—were broadcast. Tape recordings of the entire Conference are being edited down into six 15-minute programs entitled. "Help Yourself to Health," which will be available to medical societies from the AMA's Bureau of Health Education.

*AMA Delegates To Attend Elementary Education Meet*—Dr. Walter B. Martin, Trustee, and Fred V. Hein, Ph.D., Bureau of Health Education, will represent the American Medical Association at the Sixth Annual Conference on Elementary Education. Conferees will examine problems connected with improving elementary education programs when the group convenes April 30 and May 1-2 in Washington, D.C.

*Hospital Financing Survey Gets Under Way In North Carolina*—The Commission on Financing of Hospital Care recently completed a series of preliminary meetings in San Francisco, Tulsa, Cincinnati, Cleveland, Boston and St. Paul designed to point up the problems involved in financing hospital care. The Commission, an independent citizens' committee stimulated by the American Hospital Association and financed by grants from the Kellogg Foundation, Health Information Foundation and John Hancock Life Insurance Co., plans to initiate its survey in North Carolina.

'52 *Funds Approved For Medical Education Survey*—A $39,650 budget to wind up activities of the Committee for the Survey of Medical Education has been approved by the AMA Board of Trustees. The Committee reports that Survey findings should be completed and sent to the publisher by June, 1952.

A representative sample of 41 medical schools was studied with the idea of pointing up the basic problems facing medical education today. Broad objectives of the Survey are: (1) to improve medical education to meet over-all health needs of the public; (2) evaluate the degree to which medical schools are meeting the need for physicians; (3) promote the advancement of medical science, and (4) inform the public of the nature, content and purposes of medical education.

*AMA To Set Up Socio-Economic Files.*—The AMA plans to centralize its medical socio-economic files in the near future. At its last meeting, the Board of Trustees authorized the appointment of an assistant librarian to assemble and catalog this material from the various councils, committees and bureaus of the Association. Eventually a complete history of AMA policies and attitudes will be compiled from this source.

*AMA Group Acts As Liaison With Legion*—The AMA Board of Trustees recenty appointed a liaison committee of Doctors Elmer Henderson, chairman, Perrin H. Long, George F. Lull, Henry B. Mulholland, Harvey B. Stone and Walter B. Martin, to confer with the American Legion on matters dealing with national health and medical care problems. On March 1, this group met with the American Legion's Committee on Rehabilitation in Washington, D.C. The committee will meet again in April with Legion representatives.

*AMA Pays* $20,000 *In* '52 *For Chronic Illness*—The AMA has pledged continued financial support to the Commission on Chronic Illness in the amount of $80,000 to be paid over a four-year period. The Commission, an independent national agency, is conducting an intensive study of chronic illness—one of the most important health problems in America today. This year's installment of $20,000 was recently turned over to the Commission. A $300,000 budget set by the Commission for the coming four-year period has been met by twelve contributing organizations.

*New Health Education Series Aired*—A new series of health education radio programs, called "Medicine, USA," are being carried over the National Broadcasting Company network on six successive Saturdays—the first on March 29. Sponsored by the American Medical Association and county medical societies in cooperation with NBC, the shows are broadcast from New York at 7:30 p.m., EST.

Subjects include: March 29—"Alcoholism;" April 5—"Psychiatry;" April 12—"Longer Life;" April 19—"Contagious Diseases;" April 26—"Exercise and Athletics," and May 3—"Medicine's Progress."

# Woman's AUXILIARY



**Left to Right: Mrs. Joseph Bank, County Public Relations; Mrs. John R. Green, State Publicity; Mrs. Jefferson Brown, Chairman State Board of Nursing; Mrs. Thomas W. Woodman, President Maricopa County; Mrs. Muriel Crothers Henry, Director of Public Relations on National Committee of Careers and Nursing; Mr. Phil Stitt, Executive Secretary, Arizona Nurses' Association; Mrs. William Schoffman, State President-Elect; Margaret Savoy, Society Editor of the Phoenix Gazette; Mrs. George S. Enfield, County Health Chairman; Mrs. Zona Brierley, Chairman of Joint Careers for Nursing Association; Mrs. Freda Erhardt, State Nursing Board. The Luncheon was in the honor of Mrs. Henry and was held at the Kiva Club atop the Westward Ho Hotel, Phoenix.**

## REPORT ON THE NURSE RECRUITMENT DRIVE

The Maricopa County Auxiliary to the Medical Society decided after a careful study of possible projects this year, that the one of greatest benefit to the state would be a Nurse Recruitment Drive. Arizona is very much in the debtor bracket as regards fulfilling nursing needs.

With 1700 nurses in the state, we still need a full 500 more to answer our needs. The entire state graduated only 50 nurses last year from some five accredited schools of nursing. This year, we have only four such schools, since the hospital on the Indian reservation no longer operates a school. Were it not for the 600 transient nurses, our situation would be even more critical. Right now, they ease a bad situation, but do not answer the requirements of permanent installations such as schools, hospitals, administrative posts.

Since the various state nurses' organizations were likewise aware of the need, and heard of our interest, they decided to join forces with us. Thus the Arizona State Nurses' Association, and the Arizona League of Nursing Education appointed a chairman to work jointly with me. To Mrs. Zona Brierley I am greatly indebted for her effort and participation in this over-all plan. Each of us had different facets, and contacts which helped to more than widen our approach.

The week opened with a proclamation by Gov. Howard Pyle designating March 23-29 as State Recruitment Week. An intensive period has just concluded, tho it will with less publicity continue since this is not a one-time need. Into the blueprint were incorporated the churches, schools, press, radio and TV.

In the drive three colleges of this area, and eight of the high schools of Maricopa County were contacted, including the colored, technical, Indian, and parochial schools. The two groups bought the movie, "Girls in White", and the Medical Auxiliary, as a final gesture of friendship, at the conclusion of this week is presenting its half to the State Nurses Associations for their use. The schools not only showed the movie to nursing clubs, and potential nurse

recruits, but arranged to show it to science classes, including boys. My own adolescent son was thrilled at seeing the movie in a class, and the word-of-mouth discussion has helped to make young girls lean to added consideration of nursing. The various PTA groups, Mothers Clubs and youth groups have viewed the movie. In one case, it went on in conjunction with a school fashion show, and included in high fashions, *two nurses uniforms.* Thousands literally have seen the movie locally.

The drive extends next to schools in the rest of the county of which another dozen are participating. From these rural areas come many of our best nurse recruits. Two other counties are sending in nine girls from over 100 miles away, sparked by enthusiasm engendered by our state auxiliary as it has spread the word on its visits.

The final phase of the school participation is being undertaken, by Mrs. George Enfield, State Chairman on Health. In addition to helping in the forming of new chapters and strengthening of the outlying smaller ones, she has spread the "gospel" of the need for nurses. As a result, the communities in Pinal and Pima have offered to show the movie through many of their high schools in the month of April.

The churches participated, with over eighteen giving sermons or telling of Recruitment Week in their bulletins, and many asked for a follow-up of the movie and an address by a hospital nurse in their Young Adult groups in evening meetings.

Naturally the keystone of the arch is the hospital with a nursing staff, and teaching faculty, so they were vital to our planning. The three local nursing schools co-operated to the fullest, and we handled an impartial plan in which presented its own aspects of teaching.

The *hospitals* concluded the week with an open house and demonstration of their program. Over 100 girls, escorted by parents or PTA members attended each hospital for two hour periods throughout Sat. March 29th. Hospitals acted as hosts for meals and a tea.

The plan was such a success, with the girls reaching a high point of enthusiasm, and the hospitals so gratified by their interest, that the hospitals themselves volunteered to hold another open house within a month, if a like number of girls evince interest. Thus far, from discussions alone, it seems the quota will be more than filled, for it is increasingly clear, that the best recruit is the younger student with enough time to plan her courses for her career, even from eighth grade through junior year. Thus, another hundred girls will probably gather from various counties and the Phoenix area to see a hospital at first hand.

*Channels of publicity* are a MUST in such a campaign, and this the Maricopa County Auxiliary was most instrumental in getting, and the nursing groups feel grateful to us for this aspect, for they have never before had so many sides of nursing before the public and so explicitly. The enclosed material shows to some degree how far it went in awakening a lethargic public to what was likewise THEIR PROBLEM. The press gave us week day and a special Sunday spread. Thru the week day social columns a profile on nursing a day went on that publicized the school nurse, visiting nurse, practical nurse, hospital instructor, and registered nurse, professionally and service-wise.

An *editorial* in the Phoenix Gazette was followed by the high point of the week, as regards newspaper publicity. Reg Manning, who won last year's Pulitzer Prize in cartooning, did for us the poster *cartoon on nursing needs.* Inasmuch as he does not participate, even for best friends in Red Feather, Red Cross or other agencies, we feel highly honored at his consideration of our needs, and realize his chief reason for doing the cartoon which goes to over 100 other syndicated papers *nationally* (and thus helps the National Recruitment Drive) was based on the fact we were doing altruistic work, not fund-raising!

The various radio stations gave us in all about two dozen spot announcements, and one station ran a series of interviews under the sponsorship of Business and Professional Women ending with an offer spontaneously decided on of a loan fund to a would be needy nurse.

Several department stores were contacted, and gave their support. Two, Goldwaters and Diamonds were exceedingly generous with a window display of nursing. The Goldwater window showed a nurse, and the caps of the three local schools, as in a capping service. Diamonds window showed a nurse lining up a surgical table, with excellent poster display. These likewise gave the Recruitment Drive space in their advertisements by inserting slugs. Several surgical houses also gave us placard space.

It would be well-nigh impossible to close such an account without giving due tribute to the various members of the nursing profession who did so much to make this Drive a success. Miss Jefferson Brown of the State Board of Nurses helped with various aspects of the Governor's Proclamation, and assisted by lending us the movie of the Public Health Service when we needed it to supplement "Girls In White" for two showings in schools in a single day. Miss Dylis Salisbury of the State Examiners' Board helped us in our mailings throughout the state, and the many letters that went out appraising high school principals of our efforts were typed in her office, making literally dozens of copies. Her judgment, too, was invaluable in formulating the approach to press and hospitals. Mrs. Brierley and I were Siamese twins of effort.

The Medical Auxiliary in Maricopa had the great satisfaction of creating an atmosphere of cordiality between itself, the schools, churches and press, hospitals and nurses that has reached a new high in public relations. Each has come to know and value the other in this joint endeavor.

The high point of the publicity was the arrival of Mrs. Muriel Crothers Henry, Public Relations Chairman of the National Committee on Careers in Nursing. She had a radio interview, a luncheon with the press present, and our medical and nursing members present to hear her informative and inspirational talk.

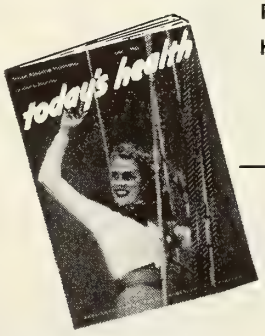
The Maricopa County Medical Auxiliary feels it sparked a program second to none, did a great public service in joining so many agencies in a common effort, and received itself the great satisfaction of a job well done.

Mrs. Joseph Bank, Chairman Recruitment Drive, Maricopa County Medical Auxiliary, Phoenix, Arizona





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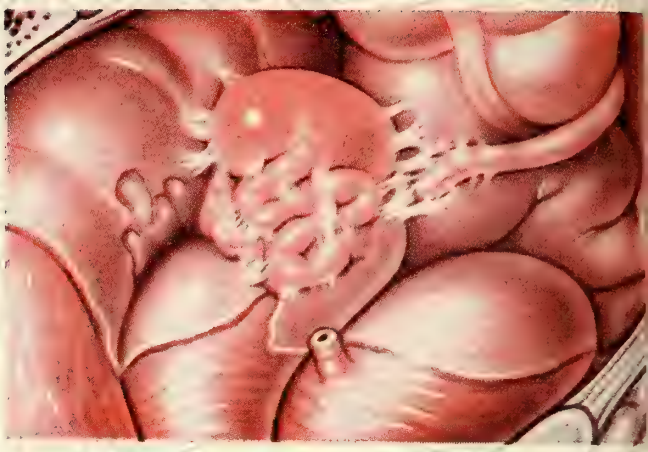
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1. Greene, G. G.: Kentucky M. J. *50*:8, 1952.
2. Stevenson, C. S., et al.: Am. J. Obst. & Gynec. *61*:498, 1951.

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| MANGANESE | 0.4 mg. | *THIAMINE | 1.2 mg. |
| *PHOSPHORUS | 940 mg. | *VITAMIN A | 3200 I.U. |
| POTASSIUM | 1300 mg. | VITAMIN $B_{12}$ | 0.005 mg. |
| SODIUM | 560 mg | *VITAMIN D | 420 I.U. |
| ZINC | 2.6 mg. | | |

| | |
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| *PROTEIN (biologically complete) | 32 Gm. |
| *CARBOHYDRATE | 65 Gm |
| *FAT | 30 Gm. |

*Nutrients for which daily dietary allowances are recommended by the National Research Council.

# ARIZONA MEDICINE

*Journal of* ARIZONA MEDICAL ASSOCIATION

VOL. 9, NO. 6 JUNE, 1952


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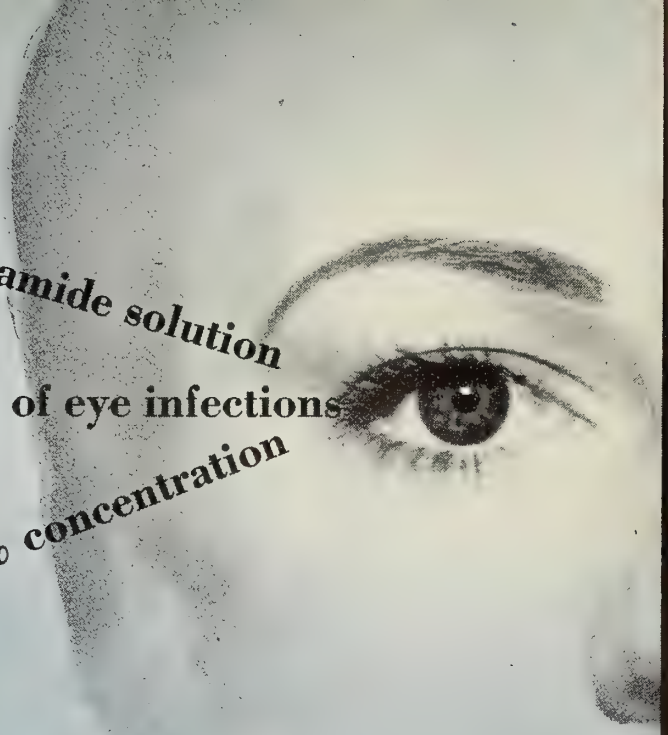
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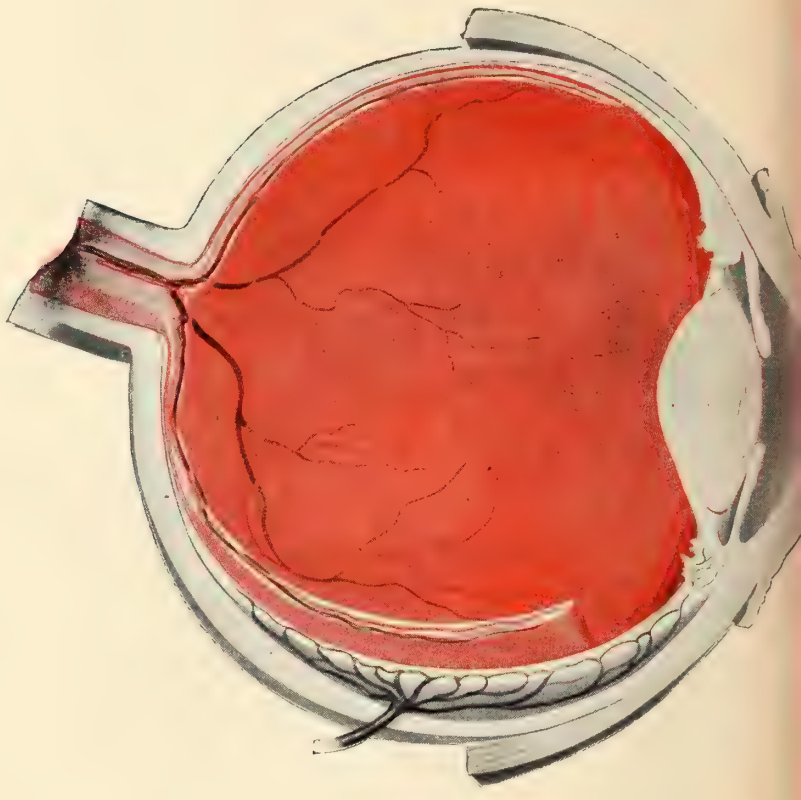
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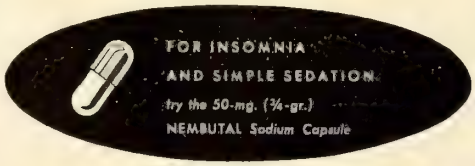
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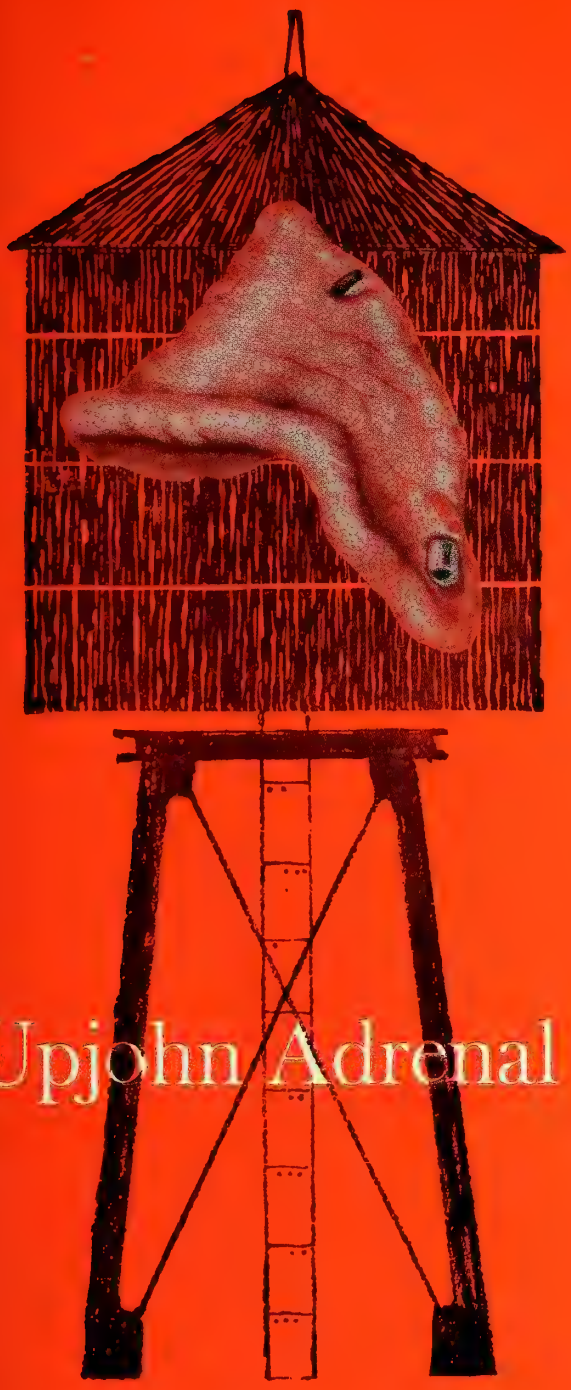
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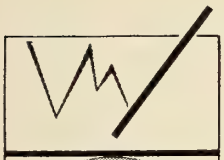
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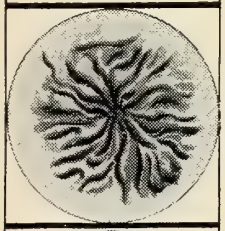
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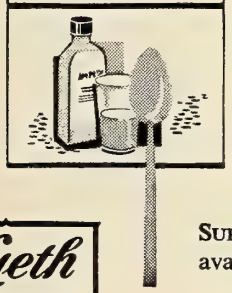


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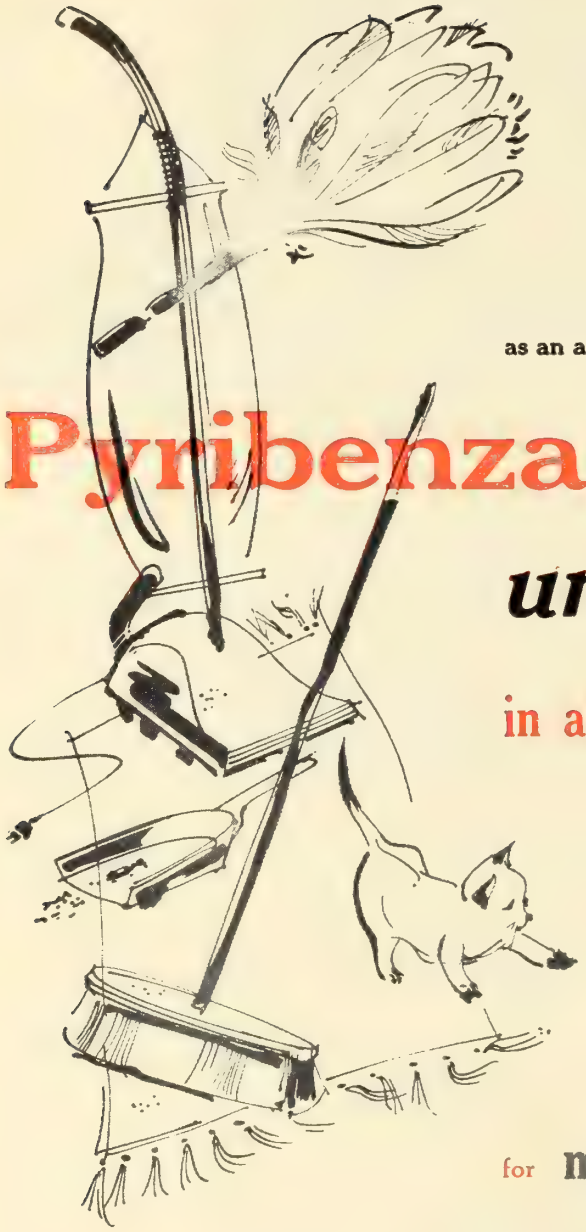
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# Original ARTICLES

## POLIOMYELITIS—ITS CLINICAL ASPECTS AND TREATMENT

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Poliomyelitis is a highly prevalent viral infection of which only a small portion of cases are clnically identifiable. Epidemics of poliomyelitis usually occur during the warm months but sporadic cases may occur throughout the year. The virus known to cause this condition usually attacks the anterior horn cells of the spinal cord and the motor nuclei of the brain, although other parts of the nervous system and other systems may also be affected. Careful sectioning of autopsy specimens in man have also shown involvement of the precentral gyrus of the motor cortex and severe lesions of the reticular formation of the medulla. Frequently involved are: (1) the red nuclei; (2) the substantia nigra; (3) the olivary nucleus; (4) the roof nuclei of the cerebellum; (5) the vestibular nuclei; (6) the internuncial neurones of spinal cord and (7) the propioceptive cells of the posterior ganglion. Opinion differs in regard as to how the virus enters the body. It was formerly believed that the nasal mucosa was the pathway through which the virus reached the central nervous system. Recently the tendency has been to consider the portal of entry may be in the alimentary tract, particularly the pharynx and the intestinal mucosa. There is no practical test by which the susceptible individual may be distinguished from the person who is immune. A previous attack of the disease even if it has been so mild that it has not been recognized usually confers immunity, although there are recorded cases of a second attack.

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Although the portal of invasion is not clearly determined it seems fairly certain that the virus travels along peripheral nerves to the central nervous system and then spreads by neuronal pathways to the motor cells which are located in the anterior horn cells of the spinal cord. The skeletal muscles of the trunk, arms and legs are enervated by these motor cells and injury to them will resolve in weakness or paralysis of the muscles which they control. Although the muscle fibers themselves are not damaged by the virus, destruction of the nerve cells renders them useless. Nerve cells can not regenerate and once destroyed are gone forever. What happens when nerve cells are only temporily damaged is not so well understood. It is thought that transitory loss of function of the nerve cells may be due to inflammation in surrounding tissues. The resultant edema may block the nerve impulse to the muscle and if this has occurred the recovery of the muscle function may result when the inflammation and swelling subsides. Occasionally the blood supply to the nerve cells may be partly shut off by the blockage of the minute vessels which supply them or by hemorrhages into the surrounding tissues. In such cases recovery may be slow but can be expected to occur when the cause of the anemia of the nerve cells is no longer present. Fortunately, complete destruction of all anterior horn cells rarely occurs. In most instances there is a patchy distribution of the damaged cells resulting in weakness or paresis rather than in paralysis. Furthermore whatever damage is done to the cells occurs during the acute stage.

The condition is not progressive and there is no danger of relapse.

Clinical types of poliomyelitis generally accepted today are:

(1) Abortive, (2) Non-paralytic, (3) Encephalitic and (4) Paralytic.

The paralytic may be of the following types; (a) Spinal, (b) Bulbar, (c) Bulbolspinal, (d) Encephalo-spinal and (e) Encephalo-bulbospinal.

The term abortive denotes those cases which show slight systemic symptoms, are usually difficult to diagnose and are suspected only during epidemics. This is sometimes called the systemic stage. During this stage the patient usually complains of a headache, sort throat, nausea and vomiting. Accompanying these there may be elevated temperature with listlessness or irritability. Snce most of these are the symptoms for many communicable diseases or illnesses in a child they may be ignored or misinterpreted by the patient and the family.

The non-paralytic types includes those cases which are characteried by meningeal signs, for example stiff neck, stiff back, and positive Kernig's without clinical paralysis. Here the patient may be unable to bring his head forward to touch his knees because of muscle spasm in the neck and back. Perspiration and flushing of the face may occur on exertion, and apprehension is evident by the anxious look so often seen. It may happen that before a noticeable muscle paralysis has occurred a significant involvement of bowel and bladder can be discovered on questioning the parents. Bed wetting in children may indicate temporary paralysis of the bladder with retention and overflow of the urine. Paralysis of the bowel may have been interpreted as obstinate constipation by the parent several days before paralysis of the arms and legs has developed.

There are several familiar patterns which the acute illness may take in both paralytic and non-paralytic types. The so-called "dromedary" or "diphasic" form is characteried by a first phase which is indistinguishable from minor illness constituting the whole disease in the abortive form. Several days may elapse between the systemic and meningeal stage of the disease. The disease appears to be quiescent during this time, the child seems well and plays as usual. Following this period there may be recurrence of fever and vomiting and in addition stiffness of neck and spine. The child resists efforts to bend the head or trunk forward. If he is placed in a sitting position in bed he props himself by holding his arms behind his back in order to prevent movement in the spinal muscles. During this stage reflexes are exaggerated and even gentle pressure on the skin ellicit pain. These symptoms indicate that the virus has invaded the central nervous system. In some cases paralysis may be the first symptom noted, the spread of the disease being so rapid that the symptoms and paralysis occur simultaneously.

Another situation and a more common one is that in which the first phase is so mild as to be missed or does not occur at all, and the acute illness developes with the appearance of central nervous system signs, sometimes after a vague non-febrile prodrome of several days duration.

Muscular weakness or paralysis accompanied by muscle spasm and rigidity mark the beginning of the paralytic stage. Two to seven days may elapse from the time the weakness was first observed until the paralysis had reached its limit. The location of paralysis depends on whether injury to the cord has occurred. If the muscles enervated by cranial nerves having origin in the medulla oblongata are paralyzed, the patient has bulbar paralysis and the muscles controlling swallowing and voice may be affected. Tightness of the hamstring muscles and resistence to extension of the legs are very common. Other muscles, including the calf muscles and those of the upper extremity may also exhibit stiffness and tightness. Whenever this stiffness and tightness exists the muscles are apt to be sore and any attempt at motion painful.

Another sign which is perhaps less well known but was described at least 35 years ago is,– "head-drop." It is elicited by having the child lie on its back, placing one hand beneath his shoulders and so lifting him up from the bed. In the normal child the head follows along in a plane with the body as it is raised, but in poliomyelitis, even in its earlier stage, the head falls back limply in a positon of hyperextension. Although this sign is not specific it occurs in children severely ill with any prostrating disease including pneumonia and meningitis. In the obvious absence of such disease it is a useful sign which suggests poliomyelitis.

Although there may be stiffness of the back,

neck and hamstrings, the reflexes in the early stages may be normal and active. In the non-paralytic disease it usually remains so. When changes begin to appear, characteristically there is first an irregular shift from normal to hyperactive and then sudden and sometimes transient shift to diminished or absent reflexes. Usually the appearance of reflex changes precedes the advent of weakness or paralyss by 12 to 24 hours. It may therefore herald that event. The superficial reflexes are the first to go, the abdominals, the cremasteric and spinal reflexes. The latter, which are normally present segmentally from the upper back down to and including the gluteal region, although not so widely tested as the abdominals, are of similar significance. Sometimes they disappear before the abdominals. The site of the absent superficial reflex is often of prognostic importance, thus if the right lower abdominal reflex disappears one may expect to find some weakness of the right lower extermity the following day.

DIFFERENTIAL DIAGNOSIS: The physician has no specific diagnostic aid to assist in making a diagnosis during the pre-paralytic stage. In non-epidemic seasons even the specialist may have difficulty in making a diagnosis unless the patient has severe involvement. Poliomyelitis has been confused with a great number of other diseases because of the vague symptomatology and a lack of exact laboratory methods of confirming the diagnosis. There are other neuroptrophic diseases which so closely resemble poliomyelitis in certain stages that a differential diagnosis is almost impossible. Some of the most common diseases are Western equine encephalomyelitis, St. Louis encephalitis, mumps meningoencephalitis, tuberculous meningitis, and Guillain-Barre' syndrome.

PHYSICAL EXAMINATION: The patient in the first phase or the abortive stage presents no abnormalities on physical examination except listlessness and fever and some redness of the pharynx. In the beginning of the second phase the situation is similar. There is fever, a dusky red appearance of the pharynx, little or no edema of the pharyngeal tissues. If and when the disease progresses, stiffness of the neck, back and hamstrings soon become very prominent and these are perhaps the most useful findings in establishing an early diagnosis. The stiffness may be mild, merely a slight resistance to the last degree of flexion of the neck, or it may rarely be so marked as to present opisthotonos. Stiffness of the spine is best ellicited by having the patient sit up in bed with the knees naturally flexed and asking him to "kiss his knee!" If the back is supple this is easily accomplished without discomfort. If the back is stiff however it will be difficult or impossible to perform. Attempts to do so will be accompanied by considerable pain. If the back is flattened or rigid, the patient may not be able to sit naturally at all but will support himself on his two outstretched hands, i.e., in the tripod position, which is also a characteristic sign.

Changes in the deep reflexes have also a prognostic value. A diminished patellar response one one side, or an exaggerated one, may point to possible subsequent development of weakness on that side. As weakness and paralysis increase there is a progressive loss of reflexes, and a patient seen in the stage of severe paralysis of all extremities may have no demonstrable reflexes, superficial or deep.

SPINAL FLUID: The most valuable laboratory test in the diagnosis of poliomyelitis is examination of spinal fluid. If the total white cell count is elevated above 8 to 10 cells and the protein above 35 to 45 mgm. per 100 cc. the diagnosis in a suspicious case is more likely. Although spinal fluid abnormalities are usual in poliomyelitis, one cannot rely on a negative test to rule out the diagnosis, because if the patient has the abortive form or is in the first stage of a "dromedary" course, a negative spinal fluid is to be expected. If he has non-paralytic or even paralytic poliomyelitis, his spinal fluid may still be normal, especially if he is seen on the first day of symptoms. Occasionally patients with the non-paralytic or paralytic form of the disease have persistently normal spinal fluid findings.

Although spinal findings are not diagnostic (or prognostic) in poliomyelitis, certain features are characteristic at various stages of the disease. First, the cell count is highest during the first week of the disease in the pre-paralytic or paralytic stages. Second, the predominant cell type is almost always the mononuclear, although often early in the disease the polymorphonuclear form predominates. Three, the protein is low and often normal during the first week but rises the second and third weeks. It remains up through the fourth week, gradually decreasing to normal by the fourth to the tenth

week. Thus the protein is still elevated, and often still rising while the cell count has returned to normal. Recent studies have confirmed and extended these early findings and it is apparent that the cerebral spinal fluid picture in late poliomyelitis resembles that of Guillain-Barre' syndrome and diphtheritic polyneuritis.

BLOOD There is no consistent change in the blood picture. As a rule the white cell count is normal or moderately elevated, 10 to 15,000, with a slight shift in the differential count and relative lymphopenia. If the patient is dehydrated there may be a high hematocrit and a more elevated white cell count. Rapid erythrocyte sedimentation rates have recently been reported to occur in about half the patients tested. At present there is no serologic test available which is diagnostic for poliomyelitis.

URINE: Routine urinalysis reveals no abnormalities.

MEDICAL TREATMENT: At the present time there is no specific treatment available for poliomyelitis. None of the antibiotics or sulfonamide derivatives which have been tried have had any effect in destroying the virus or controlling its spread in the body.

Since there are no specific therapeutic agents available medical management comes down to general supportive measures and the anticipation and handling of complications. The tendency at present is to treat all patients in whom a definite diagnosis has been made in the hospital. This is probably wise since there is such an uncertainty as to the future course in all early cases. In the hospital, management of the patient with poliomyelitis has become a task involving the services of a team of specialists. During the acute illness it has been proved most satisfactory to have its care in the charge of the internist or pediatrician with specialists in orthopedics and physical medicine acting as consultants, directing the special forms of treatment which are their province. Depending on the condition of the patient rather than on any arbitrary time designated as the end of the isolation period, the responsibility is transferred to the orthopedist or the specialist in physical medicine for convalescent and late treatment.

Abortive poliomyelitis is usually treated symptomatically. Bed rest for a few days and certainly a longer period following the mild non-paralytic type is strongly recommended, for rest may be one factor in preventing the late paralysis which sometime occurs. In the more severely ill non-paralytic patient who has high fever and is dehydrated, parenteral fluids and salt are indicated.

Sedation and relief of pain are pressing problems in the early acute disease. Relief of pain is best accomplished by the intermittent application of hot moist packs. Whenever hot packs or baths are used, salt tablets should be given to prevent chloride depletion which results from excessive salt loss in perspiration.

The response to the common analgesics is not very satisfactory. Aspirin, empirin compound, and chloral hydrate are the three drugs most commonly used. Of late the use of codeine, morphine and demeral has not been desirable because of a resultant danger of aggravating incipient or actual respiratory difficulty.

In recent years several drugs have been advocated for the relaxation of muscle tightness and relief of pain. Kabab and Knapp introduced prostigmine in 1943 and it has received extensive clinical trial with variable results. Ransohoff has recommended curare enthusiastically but not all are agreed as to its benefits and it has been found to be a drug of considerable potential danger.

What has been said of the care indicated in the pre-paralytic phase applies equally to the early paralytic. The problem of the relief of pain may continue for some time. Although the patient is comfortable during the day he may suffer night pains, severe, deep, aching pain in the weakened or paralyzed back or extremities, which persists sometimes for weeks. This pain often defies every form of treatment which may be tried, including continuous hot packs, analgensics and sedatives.

Most common complications encountered are, first, urinary retention, second, atony of the gastrointestinal tract, and third, respiratory failure.

Urinary retention, is common in patients with severe involvement of the lower extremities. Before resorting to catheterization, an adequate trial of drug therapy should be given. In most instances retention lasts only a few days and there is no further difficulty. For this reason an in-dwelling catheter is rarely indicated and never until after several days trial of drugs and repeated catheterizations have failed. The objection to in-dwelling cateters is that it tends to prolong the period of retention and the eventual

risk of infection is therefore increased.

Atony of the gastrointestinal tract is a common occurrence especially in patients with paralysis of the lower extremities. Prostigmine in small doses produces contraction of the bowel and relief of abdominal distention and discomfort. The normal tone of gastrointestinal musculature usually returns spontaneously with a few days.

Respiratory failure is the most serious complication of poliomyelitis. It may be of two types, (1) central, which occurs in bulbar poliomyelitis and results from involvement in the respiratory center; and (2) peripheral, as a result of involvement of the segments controlling the respiratory muscles, the intercostals and diaphragm. Both types may be seen in the same patient at the same time.

The treatment of respiratory failure of the central type is a problem in the management of bulbar poliomyelitis. In following the patient with spinal poliomyelitis who is beginning to have difficulty in breathing it is wise to have a respirator at the bedside and ready for use, for sudden changes in the character of the breathing may necessitate immediate artificial respiration. Not infrequently the first signs of trouble are due not to actual weakness of the respiratory muscles but predominantly to their being "in spasm," i.e. tight and stiff, just as other muscles may be. The first form of treatment to be tried, therefore, is hot moist packs to the chest, applied intermittently every 20 to 30 minute periods. In some instances the respiratory exchange improves and the patient relaxes. In others, in whom progressive muscle weakness is occurring, there may be no improvement but a progression of symptoms and signs: more and more feeble respiratory excursions, increasingly rapid pulse, cyanosis and apprehension. In such a situation respirator treatment will be necessary.

PROGNOSIS: As far as the acute stage of poliomyelitis is concerned, the subject of prognosis can be summarized briefly: (1) Early in the course no prediction can be made. (2) As long as fever persists there is a possibility that paralysis may develop or extend; once the temperature has returned to normal development of paralysis is rare. (3) The mortality rate varies considerably in different epidemics but is usually 5 to 8 percent. It is greatest in the bulbar form of the disease and in those with peripheral respiratory failure. It varies also with increasing age of the patient, being considerably higher in adults than in children.

BULBAR POLIOMYELITIS

Some of the more common symptoms found in cranial nerve involvement are outlined as follows; Involvement of:

(1) Cranial nerves 1X, X, and X1 (Cranial divisions) (nasal speech, regurgitation of food via nose, dysphagia, secretions, hoarseness, aphonia, stridor)
(2) Cranial nerve X (Singly) (horseness, aphonia, stridor)
(3) Cranial nerve V11 (facial palsy)
(4) Extra ocular nerves (III, IV, VI) diplopia, blurring, distrubance in accommodation)
(5) Carnial nerve XII (difficulty in mastication and speech)
(6) Carmal nerve V (3rd division) (difficulty in mastication)

The treatment of bulbar poliomyelitis, as we all know, can be very complicated and at times most discouraging. We can not emphasis too strongly the timely and proper use of the mechanical aids on hand, i.e., tracheotomy, the respirator (with positive pressure attachment when needed, the Bennett positive pressure mashine, the Kam attachment (inspiration and expiration regulator), the ventilation meter, and the rocking bed.

The following tables show an analysis of the cases of poliomyelitis treated at St. Monicas Hospital, Phoenix Arizona for a two year period.

POLIOMYELITIS—ST. MONICAS HOSPITAL
Phoenix, Arizona
January 1949 to December 1950
Total number of cases—237

TYPES

| | |
|---|---|
| Non-paralytic | 190—80.2% |
| Paralytic | 47—19.8% |

| Age Groups Ages | Cases #237 |
|---|---|
| 0 to 4 | 24.3% |
| 5 to 9 | 27.2% |
| 10 to 14 | 12.6% |
| 15 to 24 | 18.1% |
| 25 to 34 | 11.8% |
| 34 to 50 | 4.6% |

CARDINAL PHYSICAL SIGNS

| | |
|---|---|
| (1) Stiffness of neck | 74% |
| (2) Stiffness of Back | 59% |
| (3) Weakness or Paralysis | 54% |

(4) Hamstring Tightness 38%

COMMON SYMPTOMATOLOGY

| | | |
|---|---|---|
| 1. | Fever | 78.0% |
| 2. | Headache | 58.2% |
| 3. | Pain in neck | 56.1% |
| 4. | Pain in back | 41.0% |
| 5. | Vomiting | 38.4% |
| 6. | Pain in legs | 33.2% |
| 7. | Nausea | 21.9% |
| 8. | Muscular aches & pains | 21.5% |
| 9. | Anorexia | 20.6% |
| 10. | Sore Throat | 19.8% |
| 11. | Irritability | 18.1% |
| 12. | Fatique | 16.0% |
| 13. | Malaise | 13.0% |
| 14. | Abdominal pain | 11.8% |
| 15. | Hyperesthesia | 10.9% |
| 16. | Coryza | 10.5% |
| 17. | Chills | 8.8% |
| 18. | Peresthesia | 8.0% |
| 19. | Drowsiness | 7.6% |
| 20. | Cough | 5.8% |
| 21. | Urinary retention | 5.0% |
| 22. | Tremors | 3.8% |
| 23. | Muscular twitching | 3.8% |
| 24. | Constipation | 3.3% |
| 25. | Diarrhea | 2.5% |
| 16. | Convulsions | 2.5% |
| 17. | Mental Confusion | 2.5% |

## SUMMARY

The principal subjective and objective symptoms of poliomyelitis have been presented. In presenting these symptoms, an effort has been made to discuss them in relation to the type of poliomyelitis they are most frequently encountered. The differential diagnosis of this entity has also been briefly reviewed, enumerating some of the many diseases which closely resemble it.

The accepted treatment of poliomyelitis has also been presented—although it is still wanting in many aspects.

The charts shown reveal a breakdown of 237 cases treated at Memorial Hospital, Phoenix, Arizona, from January 1949 to December 1950. These charts respectively show (1) Types of poliomyelitis; (2) Age grouping (3) Common symptomatology; and (4) Cardinal physical signs.

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## REFERENCES

Pohl, J. F.: Early Diagnosis of Poliomyelitis, JAMA, 134:1059, July 1947.

The Minnesota Polio Research Commission, "The Bulbar Form of Poliomyelitis," JAMA, 134:757, June 1947.

Casey, A. F., Fishbein, W. I., Gordon, F. B., Schabel, F. M., Bundesen, H. N.: "Clinical Manifestations of Infection with Poliomyelitis Virus" JABA, 138:865, November, 1948.

J. B. Lippincott Company, "Poliomyelitis," Proc. Int. Polio Conference, 1949.

Anterior Poliomyelitis Issue, The Physio-Therapy Review, July-August 1947, 27:Page No. 4.

W. McD Hammon—Laboratory Aids in the Diagnosis of Poliomyelitis. Med Woman's Jr. 55:35, March, 1948.

Baker, A. B., Bulgar Poliomyelitis, Its Mechanism and Treatment. Amer. J. of Med. 6:614, May, 1949.

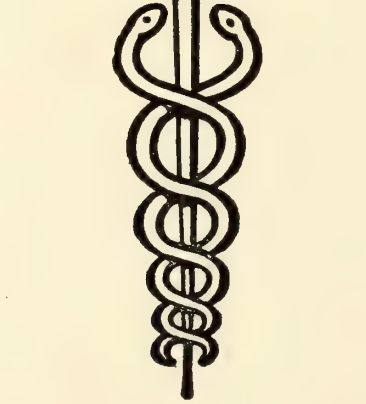
Horstmann, Dorothy M., Clinical Aspects of Acute Poliomyelitis. Amer. J. of Med. 6:592, May, 1949.

Bower, A. G.; Bennett, V. R.; Dillon, J. B.; Apelrod, B.: Investigation on the Care and Treatment of Poliomyelitis Patients, Annuals of West. Med. and Surg. 4: p. 11, 686, Nocember 1950.

Bridge, E. M., The Diagnosis of Abortive Poliomyelitis, Journal of Ped. 29:597, November, 1946.

West, H. E., Bower, A. G., "Treatment of Poliomyelitis, Involving the Respiratory System," Amer. J. of Med. Sc. Volume 217 No. 3; No 924, p. 252, March 1949.

Campbell, W. G., "Diagnosis of Poliomyelitis," Ari. Med. Volume 8 No. 1, p. 25, January 1951.



# PAS SENSITIVITY AND DESENSITIZATION

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This report is a brief summary of the clinical findings and treatment of a specific reaction to the PAS compounds. The topic has occasionally been mentioned during the past two years, but a sizable series of results has not been presented.

The term 'PAS' includes several related compounds which have been manufactured in several different trade forms. There has been a trend away from the original para-aminosalicylic acid, to a sodium salt, and recently a calcium salt has been manufactured.

The need for PAS in the treatment of tuberculosis is more because of its prevention of bacterial resistance to streptomycin than its own therapeutic effect. It has recently been stressed that the drug is not only needed, but must be given regularly and daily.

There are at least eight discomforts or hazards from the use of PAS. Some forms have an unpleasant *taste*. They produce an *intolerance* to some degree in from 10 to 50 per cent of the users, chiefly due to gastrointestinal irritation but sometimes due to CNS toxicity. A rare and transient *vertigo* may be noted, and a mild fixed follicular drug *rash* may occur without harm. *Renal irritation* and *hypoprothrombinemia* are rare complications, and the effects can be avoided by observation. *Resistance* to PAS may occur after many months of use, but sensitivity may reappear. The most dramatic and serious complication is a *specific reactivity* to PAS, a drug senstivity or allergy.

Manufacturers have attempted to disguise the taste and to decrease the gastric irritation with considerable success, but systemic effects are common to all. They occur in certain patients and with sufficient dosage. Fortunately the large doses once used in England are no longer deemed necessary.

The specific sensitivity can be defined as a systemic reaction which occurs in certain patients after they have taken full-sized doses of PAS for one to four weeks, which will cease abruptly when the drug is withdrawn, which will recur when the drug is again taken, and which may become increasingly violent even with small subsequent doses of the drug. The reaction follows use of any PAS compound, and Kierland and Carr of Mayo's demonstrated by oral use and patch tests that the salicylic acid component is the common cause.

The symptoms may include fever, malaise, headache, chilliness, chills, warmth, sweating, and rarely spasms of cough, dyspnea, conjunctivitis, jaundice, and angioneurotic edema. The signs may include a flush, a measley skin-rash. (with pruritis), and even asthma. It is usual for a few of these symptoms to occur and recur in a single individual.

The drug allergy was apparently not noted in Europe in the three years before PAS was first used in the United States. Horne of Edinbugh, however, described a case in June 1949 of "true drug sensitivity" which occurred on the twelfth day, consisted of high fever, cough, malaise, flush, rash, and rigor. Kierland and Carr of the Mayo Clinic noted the occurrence of drug sensitivity in 4 cases in October 1949, and had not heard of any previous reports; two of their patients had fever, rash, and pruritis, and two had skin lesions without fever; the drug had to be discontinued in all cases. Davin and Rogers of Los Angeles reported 4 cases with febrile reactions to PAS, occurring 3 to 4 weeks after therapy was begun, and accompanied by prostration, nausea, and vomiting; the drug was discontinued. Dr. Gwyn Roberts of San Francisco has been reported by PAS manufacturers to have a considerable series of cases. Oatway and Reding reported six cases in early 1951. Mention has also been made of such reactions in the V.A. Chemotherapy Conferences of 1951. It has been estimated that about 2.5 per cent of the cases treated with PAS develop an allergic reaction.

Treatment of the allergy has generally consisted of withdrawing the drug, usually after mistaking the condition for an intolerance or infection. It may also be confused with a specific reaction to streptomycin. Antihistamine drugs were given by Horne without success, as well as to three of our cases. Dr. Emil Bogen reports that some of the Olive View cases were controlled by dramamine, so that this approach may bear more study. A future management may consist of replacing SM and PAS with one of the new drugs.

The logical effective method of therapy for the sensitivity is to desensitize the patient to PAS. Horne told of his success in one case by using 0.1 gram 5 times a day, and increasing the unit dose to 0.1 gram every 5 days. The Lancet published a similar method, and the Barnes-Hind Company described Dr. Roberts' method,—0.1 gram 2 or 3 times per day, with an increase of 0.1 gram every 3 days. Dr. Roberts, who has done considerable amount of work with PAS injections, reports that tolerance to injection does not bring tolerance to ingestion of PAS.

Dr. Bogen has told, in correspondence, of desensitizing several cases successfully. Dr. John Steele of Milwaukee tells of several who could, and two who couldn't, be desensitized. Dr. Arthur Walker of the V. A. believes that practically all can be desensitized. Drs. Warring and Howlett of Connecticut reported a series of "allergies', including one case of Loeffler's syndrome, at a meeting of the Eastern Trudeau Section last fall, and again in St. Louis A.V. meeting in January 1952. They also desensitized with fairly good effect. Their paper has just been published in the March 1952 American Review of Tuberculosis.

*The present series* consists of twelve cases of PAS allergy. Three cases were seen (with Reding) at Barlow Sanatorium in the summer and fall of 1949; the relationship of signs and symptoms was worked out by trial and error; the only treatment consisted of a discontinuance of the drug. Nine of the cases have been diagnosed at La Vina Sanatorium since April 1950.

The diagnosis was sometimes difficult, but the sudden occurrence of a fever in the first few weeks of therapy should at once make one suspicious. (We have not seen an allergy due to streptomycin during these three years).

The *sex incidence* of this allergy is startling,—all twelve of our patients were women. (The ratio of women to men in both sanatoria has been about 2to 1). Another interesting obsercation is that no patient was acutely ill, and none had far advanced disease. Only one had an immediate need of the drug.

The time of occurrence during therapy was sometimes earlier than we had been led to expect. The first reaction was noted on the following days,—20, 14, 20; 10, 10, 19, 32, 22, 15, 8, 9, and 20.

In each of the last eight cases we have used a regular method of 'challenge doses' to confirm the diagnosis. All drugs are discontinued for 2 days; one teaspoonful of PAS or PASNA is then given with breakfast on the next morning; if there is no reaction, a teaspoon is given with each meal the following day; if any reaction to those doses occur, the amount is decreased to 1 gram the next morning.

Eleven of the twelve patients reacted to a single teaspoonful. Nine of these also reacted to one gram, tho all but two had less severe reactions. One of these developed a violent reaction within ten minutes of the 1 gram dose, given during a meal.

The signs which occurred in twelve cases were a generalized measley rash in 2, a flush in 7, and a fever in all 12 cases. The symptoms included asthma in 1, pruritis in 2, paraesthesias in 2, a feeling of coldness in 4 (with chills in 3), a feeling of warmth in 7, nausea and vomiting in 6, headache in 8, and malaise in all 12 cases.

The general routine of desensitization was that described by Dr. Roberts. PASNA granules were used, since they are easier to handle and weigh. In all except two of the cases we started with 0.5 gram, three time a day, and increased the unit dose 0.1 gram every 3 days. Streptomycin was not given until 8 grams of PASNA per day were tolerated. Weighed increases continued until 4 grams T.I.D. was reached.

We have had two types of difficulty. In the first two cases our stumbles due to eagerness, with too rapid an advance of dosage, led to setbacks to smaller amounts. Only one case failed to tolerate the final weighed 12 gram total; this patient repeatedly developed a fever of 99.4 to 99.6° when a dose of 3.6 grams was seached; chemotherapy was completed before the attempts could be successful to reach the full clinical dose.

Nine cases have been started on desensitization. One is the case described, a partial success; one is too recent to be of importance; one proceeded well to a unit dose of 1.2 grams, when a mental illness recurred and she was transferred to the State Hospital; and six cases were completely desensitized to therapeutic doses.

The time of delay before one can safely use streptomycin is a disadvantage of the routine we used. It requires 8 weeks for the average

case to get to a dose which will allow use of SM, tho SM could be given earlier in an emergency. Attempts to hurry the procedure, such as the increase of 0.2 gm. per day used by Warring and Howlett, resulted in reactions in their cases, and their best success was when they used a period of 54 days to reach 10 grams per day.

It would seem that the allergic syndrome can be recognized, and that desensitization can usually be accomplished.

## NON-SURGICAL REPAIR OF CYSTOCELE AND RECTOCELE
### An Original Technique

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Cystocele and rectocele are among the most common pathological conditions resulting from childbirth. Every prospective young mother feels apprehensive over lacerations, realizing that they may blight the joys of motherhood and deprive her of the vigorous health she should possess in the best years of her life; with the approach of middle age she experiences ever-increasing discomforts, which may eventually become extremely troublesome.

It is, of course, the aim of every obstretrician to avoid perineal lacerations, and to repair them promptly if they occur. But there will always be parturient women who are not so fortunate as to receive skilled attention. Under socialized medicine this holds particularly true.

Hernias of the vagina contain organs which are the reservoirs of the body's waste material. Gradually and slowly over the years these organs lose the support of their retaining walls; they sag and bulge from the weight of their contents; they protrude into the vaginal canal which has been loosened from its moorings; the resultant distress is both physiological and anatomical in character and the condition often leads to pathology of major importance.

If the damage can be repaired while the muscles are still in good tone, so that a firm support can be constructed, excellent results can be anticipated from operative procedures.

In vaginal hernias of long-standing, however, the muscles and ligaments have become so attenuated—such thin and narrow ribbons—that in many instances it is impossible to build a satisfactory barrier to the hollow organs which during every twenty-four hours hold material that is constantly exerting such downward pressure that the bladder and rectum eventually become sacculated. These thinned-out, overstretched, inelastic walls, exposed to the outer air and trauma, become fibrous, dry and excoriated.

For many reasons scores of women cannot or will not submit to surgical treatment at the time when a perfect result would be practically certain. With advancing years the sequelae of this neglect become more and more distressing, functionally and organically. Mechanical supports are at best a makeshift, and, in time, are usually discarded.

Women will endure uncomlainingly for years until acute or chronic cystitis, incontinece, dyschesia, bleeding or pain from injury to the hard, prortuding mass compels them to seek medical assistance.

Having observed the satisfactory results from the treatment of internal hemorrhoids with a sclerosing agent, by which the dilated veins are compressed and the normal rectal contour restored, I decided some twelve years ago to employ the same principle in the correction of cystocele and rectocele.

Two c.c. of a five per cent solution of Quinine and Urea Hydrochloride with two per cent procaine are injected into the submucous layer of the vaginal wall. The usual method is to inject one c.c. into the right side and one c.c. into the left side of the anterior wall; the second treatment can be into each lateral wall; the third into the posterior wall; then proceed at different levels. If the patient does not experience more than a momentary dizziness the dose can be, and usually is, increased to two c.c. for each injection at the next visit—a total of four c.c. per treatment. These are given twice weekly. An average case requires approximately fifty c.c.

Topical anesthesia, such as two per cent pontocaine, is swabbed over the site of injection. A three-inch No. 22 gauge Goldbacher needle is very satisfactory. If the tissue turns white at the point of insertion the needle must be im-

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mediately withdrawn to avoid sloughing. This is particularly likely to happen on the anterior wall, which frequently is leather-like and cracked. Poorly nourished as this tissue is, it is amazing how quickly a slough will heal after the introduction of a tampon covered with a soothing ointment. The patient often is unaware of it, and, fortunately, under any circumstances, it is merely a minor discomfort. Sloughs will occur in spite of the utmost care.

The needle should remain in situ for about a minute. Tough, fibrous connective tissue, lacking contractility, will not close over the needle puncture. Bleeding which may follow can sometimes prove troublesome. If it does, the area is swabbed with a modified Monsel's Solution,* which is styptic but not caustic.

It is advisable to allow the patient to remain on the table for a few moments to overcome any slight dizziness. Two patients felt ringing in their ears, one tasted quinine while the injection was in progress.

A tampon lubricated with a soothing, astringent ointment** is packed high in the vaginal vault and one or two smaller ones into the lateral fornices. Replacement of the prolapsed organs gives a gratifying sense of relief. Edema of the long-displaced tissues disappears with the return of normal circulation, and involution follows in orderly fashion. The tampons are retained for two or three days if possible, and after removal are followed by a soothing douche. It is the natural tendency of these herniated organs to push the tampons out within a few hours after the first few treatments.

Time, of course, must be allowed for the full effect of the shrinkage, although distinct improvement not infrequently appears after three or four treatments. There are many women in the fourth and fifth decades of life who are decidedly uncomfortable because of relaxed vaginal walls only, and who can be greatly relieved by a few injections into the billowing tissue.

Occasionally a patient returns after months or years for a few additional treatments.

## REPORT OF CASES

Case No. 1. C. W., aged fifty-eight, in whom frequency of urination was most annoying during the past six years. All medication proved futile. A huge cystocele completely filled the entire introitus, which slowly receded under injections of Quine and Urea Hydrochloride.

Case No. 2. P. A., aged sixty-four, was thoroughly wretched because of frequency, urinary stress incontinence, persistent backaches and a sense of weight dragging her down. Had a third degree laceration in childbirth forty years previously, when sixty-five stitches pulled loose and were never replaced, except that fourteen months later the torn rectum was repaired with skin-grafting.

She presented a well-advanced procidentia and urethrocele, requiring many injections, interrupted by long periods of absence, and made more difficult by the fact that she owned a cafeteria, where she was on her feet all day lifting heavy kettles. Finally the vaginal canal narrowed to such a diameter that she could retain a Gellhorn pessary. Quinine and Urea Hydrochloride injected around the pouting, everted urethra brought partial but noticeable relief from the urinary stress incontinence—days of freedom were followed by recurrences, especially when the weather turned cold or it rained.

She was unable to continue treatments to a more satisfactory level when she removed to another state several years ago, but two years ago reported that she was comfortable and contented.

Three weeks ago she visited Tucson. A small cystocele is now insinuating itself under the anterior vaginal wall; urinary stress incontinence is still partially relieved. The rectocele is practically eliminated; the uterus is a small knob high in the vaginal vault; the entire vaginal canal is in good tone, and so contracted she can now retain a small ball pessary which a few years ago was promptly expelled.

Now in her seventy-fifth year, her personal appearance has undergone a striking change from a woman who dragged herself along with effort, wearing an expression of utmost misery on her face, to a happy, smiling person possessing an agility that people half her age envy.

Case No. 3. A. S., aged forty-one, a primipara at 37, sought relief from a sensation of something trying to escape from her pelvis. This proved to be an enterocele, or, as Charles D. Reed of London prefers to call it, a hernia of the pouch of Douglas. After four treatments high in the posterior vaginal wall she exclaimed that

*Monsel's Solution Modified:
Liq. Ferri Subsulphate 30 c.c., S.T.37 30 c.c., 2% Tr. Iodine 2 c.c.

**Lubricant:
Benzolin Ointment (Breon) Benzocain 2% in Basal Hydrogenated Oils, Lanolin and Petrolatum.
Thymol-Alum Comp. (McNeil) equal parts.

she had such a delightful sense of well-being.

Case No. 4. F. D., fifty-two years old, wished a complete physical examination; no complaints A rectocele hung like a purse-string pouch over the vaginal outlet. She admitted defecation was only accomplished when she replaced this protrusion into the vagina. Seven treatment enabled her to have normal bowel action. A couple of check-ups in the past ten years find the condition still satisfactory.

Case No. 5. J. M., aged sixty-one, complained of a very heavy dragging sensation, frequency, and inability to walk. Locomotion was accomplished by shuffling her feet along the floor. The entire uterus protruded from the vulva, the cervix was cracked, swollen and bleeding, (Schiller test negative). After the fourth treatment the uterus remained within the pelvis; six more found it high in the vault. Then she walked with an energetic stride.

## COMMENT

Quinine and Urea Hydrochloride has a slow anesthetic effect of prolonged duration; the two per cent procaine in the ampule effects more immediate pain reduction. It infiltrates the loose areolar tissue, producing a slight inflammatory reaction with later prolferation of fibrous tissue. The subsequent retraction of this scar tissue brings about the tightening of the vaginal walls, and these slowly regain their normal texture.

## CONCLUSION

A sclerosing agent injected into the submucous layer of the vagina will produce contraction of the relaxed walls and thereby support the prolapsed organs involved in cystocele and rectocele.

1911 Hawthorne Street

# BASIC *Science* SEMINAR

## BLOOD VOLUME

### Normally And In Disease, And Methods of Determining It

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## INTRODUCTION

Knowledge concerning the total volume of blood which fills the cardiovascular system under various conditions of health and disease may aid the practicing physician as much as his understanding of variations in the blood pressure or the blood count. The necessity for considering the blood volume in relation to circulatory dynamics, fluid balance, and the composition of the blood, so clearly shown by Starling, has become axiomatic among physiologists but is often neglected or underemphasized in the bedside teaching of clinical medicine. This serious defect in the application of physiologic principles to medicine may be attributed primarily to the inadequency of the methods which are available for clinical measurement of the blood volume.

We must necessarily cofine the present discussion to a consideration of the blood volume, its normal quantity, the factors involved in its alterations, and the various methods of determining it as an aid in diagnosis.

## FUNCTIONS OF THE BLOOD

It would be necessary to recall that the functions of the blood may be grouped generally under two categories; namely, active and passive. The former is concerned with the defense of the body against various toxic agents by leucocytosis and antibodies; while the passive function deals with the transportation of various substances associated with the body's metabolism via the tissue fluids, such essential substances as $O_2$, $H_2O$, and nutrients; the removal of waste products as $CO_2$ and urea, while also and distributing hormones, and maintaining the optimal enviroment of the cells by the regulation, besides maintaining the osmotic pressure, temperature, and gas tensions of tissue fluids.

## TOTAL QUANTITY OF THE BLOOD

The average person has almost 6 liters of blood—3.3 liters per square meter surface area of the body, or 72cc per kilogram of body weight. Maintenance of this constant volume is of most immediate importance for the regulation of the blood pressure and blood flow. Death ischemia results from a loss of blood of about 40 per cent. The term relative blood volume refers to the relation between actual blood volume and the capacity of the circulatory system, for a normal actual volume becomes

inadequate when vascular capacity is increased as in vasodilation.

Clinical studies conducted on blood volume further increase ourknowledge of this subject. This study comprises an analysis of the plasma and total blood volumes, venous pressures, and blood velocity rates determined in 90 adult individuals, 49 of whom were males and 41 females. These subjects were members of the hospital staff in good health and hospital patients with no evidence or history, or on physical examination, or cardiovascular or renal disease, blood dyscrasias or debilitating disorders.

Plasma and total blood volumes, venous pressures, and blood velocity rates were determined with the subjects in a basal state.

There was a striking difference in volume of males and females, the average absolute and per Kg. plasma volume of females being 22.5 per cent and 3.7 per cent less, and absolute and per Kg. total blood volume 28.8 per cent and 4.7 per cent less than that of males, respectively.

An extreme range of about 30 per cent above and below average plasma and total blood volume is encountered in individuals, but no particular difference in range obtains between sexes. In about two-thirds of the cases in this series, plahma and total blood volumes were within 10 per cent above or below average values, and of the remaining one-third, an approximately equal number were above and below that limit.

Analysis of absolute and relative volumes by decades shows a tendency in both sexes for values to remain at or rise somewhat above the average levels of the series during middle life and to decline with advancing age. The increase in total volume in terms of body weight during middle age is more pronounced in males than in females, while the decrease after the fourth decade, apparent in both sexes, is greatei in females than in males, being about 16 per cent below middle age values in women and 8 per cent in men.

There is an increase in total blood volume with increasing individual height, weight, and surface area as calculated from the monogram of Boothby and Sandiford given by Dubois. In relation to all three of these physical measurements, in about 70 per cent of the cases total volume was within 10 per cent above or below the average volume for the group in both sexes. As regards weight only, those cases having volumes above these limits were predominantly muscular individuals, and those falling below were for the most part tall and thin.

The relation of total volume in cc per Kg. to variations in body weight was observed in the patients. In both sexes, unit volume tends to rise with increase in weight of individuals, reaches a maximum at a lower weight level in females than in males, and thereafter declines with further increase in weight, the decrease being more pronounced in women than in men. In relation to variations in height, unit volume rises with increasing indvdual heght, reaches a maxmum value and remains quite constant with increases in height thereafter in both sexes. The composite relation of total volume to variations in both height and weight; namely, surface area, clearly indicates the chief differences between the sexes in the relationship of volume to physical measurements; total blood volume in terms of surface area is about the same in small men as women, but is considerably greater in large men than in large women. In addition, with increasing individual size,, unit volume in males ncreases steadily at a gradually lessening rate, while in females it rises to a maximum value and declines rather sharply thereafter.

There were no significant variations in either venous pressure or blood velocity rate with age in either sex. The degree of variation in individuals above and below average values for the whole group is less in the case of the blood velocity rate than in venous pressure in both sexes, but in both instances the extremes encountered in males and females are about the same. The average value of both determinations is appreciably lower in females than in males The relation of total blood value to variations in venous pressure and blood velocity rate was observed in the total group of 90. It is apparent that no interrelation between variations in these two measurements and blood volume exists in normal persons.

In the method employed the red cell volume is based upon the hematocrit values of venous blood samples, being considered as the difference between total blood and plasma volumes. In this series the male hematocrit values ranged from 36.0 to 51.8 with an average value of 44.6; the female hematocrit from 33.7 to 43.8 with an average value of 39.9. Thus the average

hematocrit value for females is 10.5 per cent less than that of males.

The computed average red cell volume of males is 2,387 cc. and that of females 1,514cc., or 36.5 per cent less than that of males.

## REGULATION OF BLOOD VOLUME

Actual blood volume is maintained by a balance between ingestion of water and loss of tissue fluids through capillaries and of water from lungs, skin, kidney, and colon. The volume is regulated indirectly, inasmuch as variations in volume offset blood pressure and thereby offset tissue fluids and urine formation. Of these mechanisms, the formation of tissue fluids is the most important immediate regulatory means. An increase in blood volume as by ingestion of saliva or transfusion, raises capillary pressure and increases the rate of formation of tissue fluids, thus diminishing blood volume and pressure through the production of adema.

A fall in blood volume as by hemorrhage, emesis, diarrhea, or by inadequate ingestion of water, lowers the capillary pressure by compensatory arteriolar constriction, causing diminished formation and greater reabsorption of tissue fluids, diluting blood cells and proteins. Loss of 1 liter of blood requires about 32 hours for restoration of blood volume.

Splenic contraction may be an immediate mechanism to increase circulatory blood volume. The kidney then assists by diminishing its secretion of water, perhaps because of renal vasoconstriction; by diminishing glomevular filtration and increasing tubular reabsorpton. Thirst is also produced, leading to ingestion of water.

The same compensatory phenomena occur when the relative blood volume is altered, as when maintained cutaneous vaso dilation due to heat makes the normal volume inadequate by about 0.5 liter and a conpensatory increase occurs.

In such a case, the vessels involved in the dilatation are arterioles, capillaries, and veins. The great reduction in peripheral resistance which allows rapid rates of flow proves that arterioles are concerned, while the changes in the large veins may be directly observed; changes in the capillaries and venules may be secondary to those in arterioles. But evidence of direct effects is advanced by one investigator. the dilatation is accompanied by a very rapid flow. The greater part of this increased flow depends on an increased cutaneous circulation, though in such changes the deeper flow to the muscles may also be somewhat increased. The greater rate of flow increases thermal conductivity, allowing rapid transfer of heat inward if the cutaneous temperature is above that of the rectum or of heat outward if the thermal gradient is of normal direction. In either case the increased rate of blood flow makes the surface and deep temperatures approach each other, and it is this fact which makes cutaneous temperature measurements useful in determining the cutaneous circulation.

The vasodilatation in the skin is accompanied by a considerable rise in capillary pressure, and this increase in capillary pressure affects fluid transudation, so that edema may accumulate under appropdiate conditions at a more rapid rate at the higher temperatures. In the skin such fluid transudates must increase the moistness of the epidermis and so increase fluid loss by evaporation. It has been demonstrated that such adjustments of the degree of moistness of the skin do occur and parallel the changes in circulation through the skin both above and below the true sweating level.

## ALTERATIONS IN BLOOD VOLUME

The volume is increased as a compensatory means is acclimatization to heat (40%) and in hyperthyroidism (6%); and following the production of a large arterio venous fistula or its placental equivalent in pregnancy, where volume increases until delivery (65%). It is increased, probably passively, in congestive heart failure, although this will increase venous return and may aid in maintaining cardias output. An increase beyond the compensatory value of both cells and plasma (35%) as in cardiac failure produces deleterious effects by causing edema and pulmonary engorgement necessitating reduction by venesection. In anemia where the cell volume is diminished, the plasma volume is increased to bring the total volume to normal. In polycythemia plasme volume is probably decreased in preportion.

The volume is decreased by hemorrhage, shock (due to loss of plasma through dilated capillaries as in the intestines), acclimatization to cold (30%), hypothyroidism (15%), on assuming the erect posture (loss in leg tissues), dehydration, and supposedly in hypoproteinemia, because of increased formation of tissue fluids.

A decrease in volume to the point of producing an inadequate blood flow to tissues is relieved best by injection of plasma or whole blood, or albumen solution, rather than by crystalloid solutions which pass rapidly through the capillary wall due to lack of protein osmotic pressure to resist their passage. In cardiac failure, further increase in blood volume and protein dilution by injection of saline is especially liable to produce pulmonary edema. Concentrated plasma (2 to ) times) or hypertonic crystalloid solutions (10% dextrose in saline) may be employed to increase volume. These aid by withdrawal of tissue fluids into the circulation, if these tissue fluids have not already been depleted. Hypertonic NaCl (5%) is sometimes used in treating thromboangiitis obliterans, on the basis that it may promote circulation by increasing blood volume and diminishing viscosity.

## METHODS OF TESTS FOR DETERMINING BLOOD VOLUME

Consideration of the blood volume, even in a semiquantitative sense, lends increased significance to many of the more familiar laboratory and clinical findings in two general ways:

1. Calculation of total quanties of substances contained in the blood. The quantity of any substance contained in the blood (formed elements, protein, gases, electrolytes, etc.) can be calculated from the product of volume and its concentration, whereas data concerning concentration alone are often misleading. For instance, samples of blood from a patient with polcythemia and from a patient in shock resulting from burns might show identical hematocrit readings of 65 per cent. Knowledge that in the first clinical state the total blood volume is usually very large, and that in shock it is reduced, permits the conclusion that the total volume of circulating cells is greatly increased in the first patient and approximately normal in the second. Calculations of this type can be used in guiding therapy with blood substitutes in such states as shock and chronic protein depletion.

2. Interpretation of hemodynamic disturbances. Determinations of intravascular pressure (arterial or venous) render an incomplete picture of the status of the circulation during hemodynamic disturbances such as shock, cardiac failure or tamponade. Knowledge concerning the approximate volume of the blood and its probable distribution within the various portions of the cardiovascular system gives insight into the nature and severity of those processes which involve changing relations between vascular capacity, volume, and the rate of blood flow. For instance, arterial pressure, and even the blood count, may be within normal limits immediately after a hemorrhage involving as much as 20 per cent of the blood volume. The physician relying only on these signs may be unduly optimistic because, soon after the hemorrhage, slight tachycardia and cutaneous pallor may be the only signs to indicate the increased sympathetic activity which prevents a fall of blood pressure. At first the blood picture is not disturbed because hemodilution occurs relatively slowly as fluid is borrowed from the extravascular space to replenish the blood volume. Awareness of the extent to which the blood volume has been depleted permits the physician to decide the urgency and the extent of treatment which may be necessary.

As the result of a large amount of experimental work, several technics have been developed which employ the principle of dilution to estimate either (1) the total space occupied by erythrocytes or (2) plasma volume. Total blood volume is calculated from the cell volume and hematocrit or from the plasma volume and 'plasmacrit'. (Greater precision can be obtained by measuring cell and plasma volumes simultaneously and adding these two values.)

Unfortunately, these methods require not only special equipment and meticulous technic but also cautious interpretation of data, and therefore are not suitable for routine use in the average laboratory. When employed in the research laboratory, however, they are said to permit clinical estimation of the blood volume with an error of about 5 per cent. This compares favorably with several other determinations which are complicated by similar difficulties (cardiac output, basal metabolic rate, cardiac area or volume). Although it would be interesting to be interesting to be able to observe variations of the same, or even smaller, magnitude than the experimental error, many of the variations of the blood volume occurring in disease, or even under certain physiologic conditions, are so large that this error becomes unimportant. Furthermore, even though isngle determinations may show only slight deviations from 'normal', a series of measurements made on the same

subject over a period of time may show consistently progressive changes which are highly significant.

The average physician, although unable to make his own observations of the blood volume in individual patients, may be guided by the results of a large number of physiologic and clinical studies which have been made at laboratories where interest has been centered on this problem.

Obvious difficulties arise in the determination of total blood volume. Welcher in 1854 bled animals to death, washed their blood vessels and extracted the Hb. still remaining in their tissues. As a result of his experiments he concluded that the total blood mass of mammals constitutes 7.7 per cent of the body weight. This value was later confirmed for human beings by Bischoff who bled two criminals.

More practical methods of blood volume determinations are based on the principle that by the addition of a definite quantity of a known substance to the circulation, the total quantity of blood may be calculated from the concentration of the foreign substance in a sample of blood. Normal salt solution (Oohnstein Zuntz), tetanus antitoxin (Von Behring), Acacia (Meek & Gasser), carbon monoxide (Haldane & Smith) and various nontoxic dyes have been used for this purpose. By the carbon monoxide methods, the saturation of the red cells of an individual to whom a certain amount of carbon monoxide has been administered in determined, and the total quantity of blood is estimated from the relative quantities of erythrocytes and plasma as determined by means of a hematocrit. In the dye method, the plasma volume is first determined from the dilution of a given quantity of dye injected into the blood, and the total quantity of blood is then estimated from hematocrit values. The introduction of nontoxic, slowly-diffusing blue dye, T-1823, and various technical improvements, such as those introduced by Price and Longmire, have made the procedure more accurate. Another useful method involves the introduction of erythrocytes "tagged" with radioactive iron and the measurement of their dilution among the subject's red cells with the aid of appropriate equipment.

Methods of blood volume estimation have been criticized by most investigators who have attempted to use them. As Lamson and Nagayama point out, the blood is not a homogeneous fluid, but a suspension of corpuscles of varying size in a fluid which is undergoing variation in volume; the concentration of corpuscles is not constant throughout the circulation. Methods dependent upon the injection and dilution of a known amount of substances into the blood stream measure only the volume through which the blood carrying the ingested substance circulates. By such methods, it is not possible to differentiate between changes in circulating blood volumes due to fluid loss or to vasomotor or circulatory changes. Absorption of the foreign substance into the tissues and its rapid excretion or destruction are other sources of errors. Specific objection to the carbon monoxide method include the time lag in the saturation of the Hb.—the splenic spaces, the dependence on environmental temperatures, and the possible absorption of carbon monoxide by muscle Hb.

It has been found that the usual hematocrit procedure fails to eliminate plasma completely from between red cells, the true volume of packed red cells per 1 cc. ml. being 7 to 8.5 per cent lower than is assumed. Furthermore studies with radio activity, tagged red corpuscles indicate that average for the whole body is lower than the volume of packed red cells in the jugular vein, and still lower values are found in the capillaries, arterioles, and venules.

## BLOOD VOLUME IN HEALTH

The total blood volumes varies with the height, weight, and surface area of the body. Using the dye, T-1824, or Evan's blue, Gibson and Evans found an average of 43 cc. plasma volume per kilogram body weight in adult males and 42 cc. in females. The total blood volumes were 78 and 66 cc. per kilogram respectively, and 2,923 and 2,523 cc. per square meter body surface respectively. Although wider inter-individual differences were found in majority of adults, plasma volume within 10 per cent of the above average values were observed. According to this data, the total blood volume represents 7 to 8.2 per cent of the body weight. By the carbon monoxide method somewhat lower values have been recorded (4.8-8.4 per cent).

In infants the blood volume in relation to body weight is relatively much higher than in adults. High values (100-195 cc. for each kilogram of body weight) are found particularly in the first few weeks of life. Increased quantities of red cells are said to make up the greater

proportion of these high values. On the other hand, in relation to surface area, infants have relatively less blood (1,700 cc. for each square meter) than adults. Rapid alterations in blood volume occur in the first few weeks of life, following which more gradual changes take place until values found in adult life are reached.

The total blood volume tends to remain fairly constant despite numerous disturbing influences. The ingestion of large amount of water and even blood transfusions are associated c only vary temporary increases in the total blood volume. The fluid portions of the blood are rapidly removed from the blood vessels by the kidneys and tissues, and even the increases—the cellular elements following transfusions—are maintained only for a few days. Likewise, reduction in total blood volume as by hemorrhage or excessive vomiting and diarrhea is made up as much as possible by the passage of liquids from the tissues to the blood vessels. The work of Bancroft and his co-workers in England, of Binet and his school in France, and of Izquierdo and Cannon, and Harzis and Mann in this country, indicates that the spleen plays an important part or role in buffering mechanically the vascular system against alterations in blood volume.

## BLOOD VOLUME IN DISEASE

Details concerning blood volume in disease will be found in the discussion of individual disease. It will suffice here to say that in polycythemia vera and in leukemias increases in the total blood volume have been found, whereas in anemias and sometimes absolute increase in plasma volume has been noted. In certain diseases associated with splenomegaly, notably cirrhosis of the liver, hemolytic jaundice, and Bantis disease, the total blood volume appears to be in excess of normal.

In peripheral circulatory failure of shock, the circulating blood volume is decreased, and in cardiac failure, it is increased.

Not until 1924 and 1925 when the studies of Bancroft were published did the problem of blood volume changes enter into circulatory system pathology. Bancroft found that the spleen is a blood depot which is capable of storing "depot blood" and of releasing it into the circulation. Eppinger and Schurmeyer studied the changes in the circulating blood volume in collapse and related conditions. This was the beginning of an extensive literature on the changes in blood volume as co-efficient of circulatory insufficiency.

Wollheim found increased blood volume in patients with disturbances of circulation who had the following clinical signs: decrease in the dyspnea on sitting with legs hanging down, insomnia, acrocyanosis, marked filling of the neck veins, especially on liver pressure, increased venous pressure, decompensated after work or rhythm disturbances (plus decompensation). He found decompensation with decreased blood volume (minus-decompensation) in patients whose dyspnea was slightest on lying down, who were sommolent, with surface area cyanosis, poorly filled neck veins, low venous pressure and decompensated after infection or disturbance of rhythm. This scheme does not seem justified since a clinical division is built up on the basis of a symptom, a procedure whch is not done for other symptoms n patients with circulatory disturbances such as dyspnea, cyanosis, or edema. It is also difficult to classify these cases pathogenetically or to determine the pathologic-anatomic cause of the disease picture. One does not know exactly whether stasis is mechanical or due to insufficiency of the venous backflow. Wollheim classifies minus-decompensation and vasomotor collapse separrately.

Hitzenberger and Tuchfeld found in compensated hypertonias decreased or barely normal blood volumes. In decompensated hypertonia and myomalacia slightly but occasionally greatly decreased blood volume. This was often found in connection with a large liver. They believed that the active or passive collection of large quantities of blood in the liver produced the small circulating volume of blood on the one hand and the painful liver stasis on the other hand. Decompensated emphysema was found to be associated with an increased circulating blood volume, a disease picture in which, according to Wenckebach, is usually small. Valcular lesions are nearly always associated with increased blood volume, varying with the degree of stenosis and the distribution of the stasis. In mitral stenosis there are relatively large amounts of blood. According tc Wollheim, left insufficiency with orthopnea is usually associated with small blood volume. He did not find decreased circulating blood volume in decompensated emphysemaand found the results of treatment on blood volume to be ex-

tremely variable. In hypertonia, Ewig and Winsberg found the circulating blood volume to be decreased at tiems, at times normal and half the cases increased. In decompensated hypertonia there was a definite, sometimes considerable increase. Normal or decreased volumes were never found in decompensated valve lesions.

The present authors made a study of blood volume in 82 patients, most of whom had circulatory disturbances, some had other diseases which were associated with circulatory disturbances. Group I consisted of 12 patients with clinically definite edema. They showed a decreased blood volume and a denitely decreased plasma volume. In edema there is difficulty in relating blood volume to normal body weight. It is, therefore, based on minimum weight in a non-edematous state. In cases of edema, even with severe decompensation there is a decrease in the circulating blood volume and the circulating plasma volume. This is in agreement with Volhard who stated that the greater the hydrops, the smaller the volume of circulating blood.

The Group II consisted of 13 normal persons. These were youthful people, chiefly students which explains the small absolute values. The average was 43 cc per kg. body weight for the circulating plasma volume and 80 cc. per kg. for the circulating blood volume. The lowest value obtained for plasma volume was 33 cc., the highest 51 cc., and for ricculating blood volume, the lowest value 66 cc., and the highest 93 cc.

Group III comprised 9 cases of hypertonia. The variations were quite great. There were clinically thoroughly compensated or only slightly decompensated patients who had increased, normal or definitely decreased blood volumes. In beginning lung congestion, in cases with cardiac asthma (left insufficiency of the heart) there were increased values.

Group IV comprised 10 cases. In some cases there was low venous pressure with small plasma volumes, and group V was comprised of cases of emphysema, some with right heart failure in which the average volume of circulating blood was relatively large. This is in agreement with the findings of Hitzenberger and Tuchfeld. Patients with considerable cyanosis had increased blood volumes.

Group VI consisted of 10 cases of decompensated mitral stenosis. In these cases there was an average considerable increase in the circulating plasma volume to 52.3 cc. and of the blood volume to 103 cc.

Group VII comprised 13 cases of definitely enlarged liver. The plasma volume reached the highest average value of 54 cc., the blood volume its highest value of 107 cc. Three patients with liver cirrhosis had 98 and 105 cc., respectively. One patient wtih Bantis disease confirmed at autopsy had 112 cc. She had severe stasis hemorrhages. In a patient with polcythemia rubra of the Vaquez type the blood volume was 124 cc., the plasma value being normal. The remainder of cases consisted of mitral stenoses with definite enlargement of the liver and slight or absent edema. Not included in the table was a case of patent ductus Botalli (98 cc. blood, 48 cc. plasma) and a case of paroxysmal tachycardia (93 cc. blood, 42 cc. plasma).

In a number of cases during the course of treatment with improvement of the clinical picture the increased blood volumes and plasma volumes decreased to normal or nearly normal.

## CONCLUSION

In this paper, it has been tried to summarize the physiological and pathological significance of blood volume and the different methods to determine it.

In passing I would like to express my appreciation to Dr. B. Pasterneck, Louis Hirsch, Miss Rose, the Librarian of St. Mary's, and Mr. Jose del Castillo for their valuable suggestions and kind assistance in helping me prepare this paper.

### BIBLIOGRAPHY

1. Tices, Practice of Medicine, 1951, p. 704.
2. Main, Synopsis of Physiology, C. V. Mosby Company, 1946, pp. 128-143.
3. White, Heart Diseases, New York, The Macmillan Company 3rd Edition, 1944.
4. Gibson, John G., 2nd., and Evans, William A., Jr., Clinical Studies of the Blood. Volume II, Journal of Clinical Investigation, 16:317 (May) 1937.
5. Bazett, H. C., The Effect of Heat on the Blood Volume and Circulation, Journal of the American Medical Association, 111:1841 (November 12) 1938.
6. Uhlenbruck, P., and Vogels: The Problem of the Circulating Plasma Volume (Blood Volume) in Circulatory Disturbances. Zeitschrift fur flinische Medizin, 118:172, 1931.
7. Brown, Ellen and Hopper, James, Jr.: Some Practical Considerations of the Blood Volume, American Practitioner, 4:191 (December) 1949.

# PHOENIX Clinical CLUB

## MASSACHUSETTS GENERAL HOSPITAL CASE NO. 17212

**The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.**

Dr. Sven M. Gundersen: This was a sixty-six year old married salesman who came into the hospital on March 17 in a rather delirious condition. His history was obtained from his wife. As he had been married to her only twenty years, the past history is probably unreliable.

He had passed an insurance examination nine years before admission and was perfectly well so far as she knew until three years before admission, when he started having symptoms of diabetes,—increased thirst and appetite, frequency of urination, some loss of weight and strength. His physician found sugar in his urine and put him on a diet, but gave him no insulin. He lost thirty pounds in three months under treatment and felt much improved. He returned to work and gradually to his normal diet when his physician died.

Ten months before admission he started to have dyspnea on exertion and also easy fatigue. These symptoms lasted until six months before admission, when he went to a doctor and was found to have an enlarged heart and also arteriosclerosis. He was given digitalis. From that time until admission the patient did not work. His activities were greatly diminished. He had to stay at home all the time and could get about the house only a little. Three months before admission he developed cough productive of a small amount of whitish sputum. At the same time he began having attacks of typical paroxysmal nocturnal dyspnea. Just before admission he had been having ten or twelve of these attacks at night. Three weeks before admission he suffered a return of the nocturia which he had three years before and became entirely disoriented and euphoric. At that time he began to have edema of the ankles and loss of appetite. His physician gave him more digitalis, some colorless medicine which he called "nerve medicine", and some pills.

His first wife died of tuberculosis. Of her four pregnancies one child was stillborn, one died of tuberculosis and one was in an institution for the feeble-minded.

Clinical examination revealed a man obviously in a euphoric and irrational state. He was cyanotic, emaciated and quite dyspneic, sitting propped up in bed. The pupils were irregular and unequal and reacted poorly to light, better to accommodation. The heart was greatly enlarged to the left and downward. At the base were to-and-fro soft systolic and diastolic murmurs. The blood pressure was 165/0 to 185/0. There was marked arteriosclerosis. There was Corrigan pulse. The brachials were tortuous and sclerotic. There were signs of fluid at the right base posteriorly. There was a pistol shot in the groins. The right ankle jerk could not be obtained.

The white blood cell count was 15,000, with an essentially normal differential count. There was no anemia. The one urine specimen obtained showed no sugar.

The patient became rapidly more in spite of digalen given intramuscularly, and died forty-eight hours after admission.

Robert S. Flinn, M. D.

This 66 year old man was apparently perfectly well except for mild diabetes up until ten months before admission when he began to be troubled with heart failure. In spite of digitalis, there was apparently no improvement in his condition; he became more disabled; developed nocturnal dyspnea and became disoriented and euphoric.

On examination he was found to be cyanotic, emaciated, dyspneic and irrational. The pupils were irregular and unequal and reacted poorly to light, better to accommodation. The heart was greatly enlarged to the left and downward. At the base was a to-and-fro soft systolic and diastolic murmur and the blood pressure 165 to 185 systolic and 0 diastolic confirmed the diagnosis of aortic regurgitation. There were signs of fluid at the right base posteriorly. The

right ankle jerk could not be obtained from which one is forced to conclude that the left ankle jerk as well as the knee jerks were obtainable.

Let us discuss for a moment the clinical findings. The patient is said to be euphoric and irrational. A patient, mortally ill with heart disease, may be expected to be irrational but I cannot recall having seen a patient dying from heart disease who could be called euphoric. The cyanosis, the dyspnea and the emaciation can also be explained on the basis of his heart affliction. The pupils were described as irregular and unequal and reacted poorly to light but better to accommodation.

The Argyill-Robertson sign consists in the loss of contraction of the pupils to light with retention of contraction of the pupil to convergence and accommodation. It usually indicates injury to the mid-brain, commonly syphilitic. Indeed, it is a sign that is regarded as practically conclusive evidence of syphilis of the nervous system. It is one of the three classical signs of tabes, the other two being, of course, Westphal's sign (absent knee jerks) and Romberg's sign. I should hesitate to make a diagnosis of central nervous system lues on the basis of a questionable Argyall-Robertson pupil alone without collateral evidence. The statement "the right ankle jerks could not be obtained" implies that all other reflexes were physiological in character and not abnormal. It is possible, of course, that the patient was so critically ill and uncooperative that a satisfactory neurological examination could not be made. However, there is nothing in the past history, inaccurate as it is, to suggest the presence of tabes dorsalis. There is no history of the sharp, stabbing pains in the legs, the impairment of sensibility to pain, the impairment of sense of position of the limbs, the visceral crises or urinary incontinence. There is also no report of a flocculation test for syphilis but I presume the patient was in the hospital too short a time for such a test to be reported upon.

Although abnormality of pupillary reflex together with absence of deep reflexes are considered almost pathognomonic of cerebro-spinal syphilis, it should be remembered that Adie's syndrome, a benign disorder, may simulate tabes dorsalis. In this condition the pupils are unequal in size and react slightly to light. However, after about an hour in the dark, the pupils dilate and on exposure to bright light, a slow contraction of the pupil is seen. Moreover it behaves in a curious fashion on convergence. If the patient fixes on a near object and continues to gaze at it intently, the pupil sometimes after a delay of several seconds, contracts slowly and with increasing slowness through a range often greatly in excess of normal. Contraction down to pinhead size is not uncommon. The larger pupil then becomes smaller than its fellow. The tonic pupil responds normally to mydriatics and miotics. There may be, in extreme cases, absence of all deep reflexes but more frequently there is an absence of one or both ankle jerks. This disorder is seen more frequently in females than in males and in the young adults. This cause is unknown. I can recall having seen this disorder in a young man at the Queens Square Hospital in London. A blood Wasserman taken as preliminary to a blood transfusion in which the patient was to act as donor, was reported as faintly positive. Examination disclosed the tonic pupils of Adie together with the absence of certain deep reflexes. A tentative diagnosis of tabes dorsalis was made until the second Wasserman report was negative and a more careful examination disclosed the differences between this tonic pupil and the Argyll-Robertson pupil. In the latter, males are more frequently affected, the pupil is usually bilaterally affected and does not respond to light but reacts promptly and normally to convergence and accommodation. It should be emphasized however that not infrequently Adie's syndrome has led to an erroneous diagnosis of tabes dorsalis.

When we turn to a consideration of the cardiac condition, it is apparent that the "guts of the situation," as the English say, is the differential diagnosis of the aortic diastolic murmur. I propose to dismiss the systolic murmur as being of little value in the differentiation, since aortic insufficiency is often accompanied by a systolic aortic murmur in association with a characteristic diastolic murmur and peripheral signs of aortic insufficiency. The systolic murmur in such cases is due to the forceful ejection of the blood into the aorta. However, it should be remembered that the patients with pure aortic stenosis or sub-aortic stenosis may have a systolic and diastolic aortic murmur. In such cases, however, the peripheral signs of aortic insufficiency are absent and the exact cause of the diastolic murmur here is not known. Coarcta-

tion of the aorta also produces a systolic murmur at the aortic area. This murmur is not only transmitted to the neck but to the back where it is as loud as the murmur is anteriorly. The question we must then decide is whether or not this patient's aortic insufficiency is on a syphilitic or on a rheumatic basis. The typical murmur of aortic insufficiency is blowing in character, occasionally musical, usually high pitched but may be soft or loud. It may or may not mask the second sound. When it is soft, it can be heard better with the patient leaning forward and by using the Bowles stethoscope or the naked ear. When the murmur is due to syphilitic aortic insufficiency, it is often very hard, loud and may sound like the buzzing of a saw and may even be audible without the stethoscope. The murmur of rheumatic aortic insufficiency is usually softer and lower pitched.

The murmur is transmitted along the left sternal border toward the apex. When it is due to rheumatic aortic insufficiency, it is usually heard best in the third left interspace and not in the aortic area, contrary to the murmur of syphilitic aortic insufficiency. Several reasons have been advanced for this. In rheumatic heart disease a clockwise rotation of the heart around its long axis is common. This rotates the aorta to the left. In syphilitic aortic insufficiency there is usually marked dilatation of the aorta which extends beneath the sternum towards the right. In addition, massive left ventricular enlargement is often present with its counter-clockwise rotation which rotates the aorta to the right. It should be pointed out that functional aortic insufficiency with all of the characteristic signs of organic aortic insufficiency can occur in dissecting aneurysm of the aorta and in dynamic dilatation of the aorta. In the former condition a diastolic murmur may appear if the dissecting column of blood causes deformity or incomplete coaptation of the aortic valve. In dynamic dilatation of the aorta there is a functional dilatation of the ascending aorta and aortic valve seen in patients with hypertensive cardiovascular disease, glomerulonephritis, in severe anemias, in hyperthyroidism and may even occur in patients with rheumatic heart disease. Although on physical examination the characteristic murmurs of aortic insufficiency are present together with the wide pulse pressure and other peripheral signs of organic aortic insufficiency, on post-mortem examination normal aortic valves may be found and the aorta may be actually hypoplastic. Dynamic dilatation of the aorta can sometimes be suspected if the signs of the aortic insufficiency appear only during the time when the heart is over active or the patient is in heart failure, the signs disappearing when the heart rate slows or when cardiac compensation returns.

There are further differential points between the syphilitic and rheumatic aortic insufficiency which bear mentioning. Rheumatic aortic insufficiency, of course, is seen in younger aged groups; syphilitic aortic insufficiency in older people. Indeed, uncomplicated aortic insufficiency in adults over 35 years of age is rarely of rheumatic origin. Frequently in rheumatic aortic insufficiency precordial prominence or marked displacement of the left nipple is present indicating that the heart disease began in childhood. In most cases of syphilitic aortic insufficiency, the flocculation tests for syphilis is positive but it is possible for a patient with rheumatic heart disease to have coincidental syphilis. Neurosyphilis is present in a high per cent of cases of cardiovascular syphilis and such stigmata such as inequality or irregularity of pupils, the Argyll-Robertson pupil, the loss or diminution of knee or ankle jerks, abnormal spinal fluid findings and such as are usually present.

In the case under consideration, the description of the murmurs make it impossible to differentiate between syphilitic aortitis and rheumatis heart disease on the basis of the murmur alone. Moreover the past history lends little support to either diagnosis except that one may speculate that the one stillbirth and one feeble minded raises a suspicion of syphilis. The age of the patient favors a diagnosis of syphilis rather than that of rheumatic infection. That fact, together with the abnormality of the pupillary reflex, makes a diagnosis of syphilitic aortitis and neurosyphilis a most reasonable one.

Geo. G. McKhann, M. D.

We shall title this mystery, "The Wages of Sin".

Judge Phillips has picked a case that is short, looks easy, with an admittedly unreliable history, an insufficiency of X-ray and electrocardiographic reports, and a totally inadequate laboratory work-up. Either some pertinent information has been omitted, or the hospital staff was on vacation, or they were too busy working up my next case,—a three page one that Dr.

Dysart chose. However, there is ample clinical information.

Once last year I searched so hard for the "nigger in the wood pile", Dysphagia Lusoria, that I missed the wood pile completely,—a dissecting aneurysm of the aorta. This time I shall keep to the wood pile. Any "niggers" in it are hereby advised that they will not be disturbed.

Our patient was a 66 year old salesman, unconscious on March 17th. Could he have been Irish and have celebrated St. Patrick's Day too well?

His second wife of twenty years furnished the history which was said to be unreliable. Evidently he followed the dictum of "tell 'em nothing".

At the age of 57 he had no cardiac murmurs, for he passed a life insurance examination. At age 63 diabetes developed, as evidenced by polydipsia, polyphagia, polyuria, glycosuria, and loss of strength and weight. Diet with loss of thirty pounds in three months relieved the diabetes. He must have been overweight. He remained well for an unknown period until his own physician died, when he returned to his usual diet. The effect was not reported. For patients there is a moral to this story. Pay your doctor bills, and keep your physician alive. You may need him.

Anyway he continued well for one year and eleven months. Then dyspnea on exertion indicated developing heart disease. But he endured this for four months before choosing a new physician, who found arterio-sclerosis and an enlarged heart, for which he prescribed digitalis. Evidently this M.D. did not do a serology test either, nor did he take too careful a history. That ended our patient's working days, for now he could "only get around the house a little." After three more months pulmonary edema appeared, and nocturnal cardiac asthma, then disorientation, euphoria, nocturia, and ankle edema three weeks before admission. All these were no doubt signs of progressive cardiac failure. Medication: more digitalis, "nerve medicine", and pills.

Now we get the low down. His first wife died of tuberculosis as did one child. That does not seem pertinent. But this wife had one stillborn, and one child became an inmate of an institution for the feeble-minded. Even if we are not given his serology, these two facts lend suspicion of lues.

On admission he was euphoric, irrational, cyanotic, orthopneic, and had cardiac dilatation and hypertrophy of an aortic configuration, systolic and diastolic murmurs, a high systolic blood pressure with a zero diastolic, a Corrigan pulse, and "a pistol shot" in the femorals. All these pieces of the diagnostic picture puzzle when assembled reveal an aortic valvular lesion with complete insufficiency. A right hydrothorax appears early in heart failure. There was arterio-sclerosis also. Also there were symptoms and signs of a lesion of the nervous system,—namely irrationality (which might be ischemic), euphoria, anisocoria, Argyll-Robertson pupil, and an absent right ankle jerk.

A still-birth, a feeble-minded child, a gradual, late developing aortic regurgitation without acute illness or infection, and with neurological signs completes the wood pile, and these sticks fall into position to spell syphilis. He must have gotten it from or given it to his first wife. The only flaw in this is the long duration before the cardio-vascular and neurosyphilis developed, more than twenty years. Perhaps he had had some treatment from his own physician. Again one must say that it was most unfortunate that his own physician died.

But just to be certain of our diagnosis, let us review the possible sources of such a combination of clinical wood. According to Paul White the following may cause aortic insufficiency. First, Rheumatic Fever, of which we have no history. Such heart disease is said to occur more often in cold climates. The murmur is heard more often along the left sternal border. Second, Syphilis, in which the murmur is more likely to be along the right sternal border. This type of lesion is more often seen in warm climates,—a commentary on the sex habits of the natives. Third, Acute and Subacute Bacterial Endocarditis. We have no history consistent with such. Fourth, Sclerosis of the aorta and valves. Here a systolic murmur transmitted toward the neck is present, but the diastolic is usually lacking. Fifth, Trauma, of which we have no history. Sixth, Dissecting Aneurysm, which is a very rare cause of aortic regurgitation.

Rarely a dissecting aneurysm heals with a double barrelled aorta, and may result in aortic insufficiency. But we have no history of sudden onset with severe illness following excruciating pain, altho the hypertension, and the neurologic

signs might be consistent with dissecting aneurysm. Ten to fifteen percent of dissecting aneurysms are reported not to have pain. Probably many of these do not live long enough to give any history at all.

Still, a dissecting aneurysm might be the "nigger in the wood pile" that I have sworn not to disturb. But if it is, such a diagnosis is not permissible from the information given. The development is entirely lacking in the sudden, severe, tearing pain with shock, and step like spread of pain and neurological symptoms seen in dissecting aneurysm. Our patient had a slowly progressive development of symptoms. It was tragic that he was not treated earlier by his own physician.

My diagnosis is Syphilis wth Syphilitic Aortitis with Aortic Insufficiency, and Neuro-syphilis.

CLINICAL DIAGNOSIS

(From Hospital Record)

Arteriosclerotic and luetic heart disease with aortic regurgitation.

Relative mitral insufficiency.

Congestive failure

Central nervous system lues?

Diabetes mellitus.

ANATOMIC DIAGNOSIS

Arteriosclerosis.

Syphilitic aortitis regurgitation.

Vascular nephritis.

Accessory lobes of the liver (gummata?)

Hyalin degeneration of the arterioles of the pancreas.

Cholesterosis of the gall bladder.

PATHOLOGIC DISCUSSION

Dr. Tracy B. Mallory: The autopsy on this man was unusual, showing the most extreme degree of arteriosclerosis that I think I have ever seen. I have his heart and kidneys here. I think even at this distance you can see the extraordinary degree of atheroma. The process is most marked in the ascending and abdominal portions. There is an extreme degree of vascular nephritis. We found evidence of arteriosclerosis everywhere.

Throughout almost the entire aorta there were raised areas varying from a few millimeters to a centimeter or more in diameter which were sometimes yellowish, more often pinkish in color, extending up a considerable distance, two or three sometimes four millimeters from the surface. Those masses looked almost like the vegetations seen on the heart valves in bacterial endocarditis except that they were not quite so red. They did not seem to contain much fibrin. In between these areas the intima was thick, white and fibrous, here and there showing definite pitted scars quite suggestive of lues. Two of the cusps of the aortic valve were rather definitely separated and I feel quite certain represent a luetic lesion. Many cases of luetic aortitis show an associated very marked atheroma. In the face of atheroma, when it is marked one fairly regularly gets shallow ulcers, and in those ulcers little thrombi of platelets and fibrin commonly form. It is most unusual, however, to find such extensive thrombosis.

This section represents one of those projecting thrombi. Every one of those slits represents a crystal of either cholesterin or some fatty acid. The major portion of the mass consists of lipoid crystals which are imbedded in a rather delicate hyalin matrix probably made up of fused platelets. It seems to contain very little fibrin. The media is very much narrowed, while the advertitia is much thicker and denser than usual and contains many perivascular clusters of dymphocytes. Such a picture is ordinarily taken as characteristic of lues. In some places the media shows vascularization, which is again suggestive of lues but not positive evidence.

The lung is quite interesting in that it too shows a very unusual degree of arteriosclerosis. This vessed for example is almost completely occluded. Only one-tenth of its lumen is patent. Here is another artery with well marked intimal thickening, though still fairly patent, while in the center of the field is a completely occluded artery.

The kidneys are typical of vascular nephritis. The cortex is narrowed. The larger vessels show thickened walls. The small vessels are hyalinized. Some of the glomeruli are completely sclerotic, and there are beginning areas of tubular atrophy about them.

The liver was quite interesting. It showed some very deep depressions which divided the liver into several small accessory lobes. The question came up as to whether it was a congenital abnormality or whether they were scars of healed gummata. It is very suggestive of a syphilitic lesion, although not entirely characteristic. In one section of the liver was a small area of necrosis. With the higher power you can make out the giant cells and a few lymphocytes. It may be either a miliary tu-

bercle, the only one found in any of our sections, or it may be a miliary syphilide. The remainder of the liver shows only very marked passive congestion. His pancreas shows a very definite hyalin degeneration of the arterioles which goes with the history of diabetes.

It is interesting in view of the extraordinary atheromatous deposits in the aorta that he had very marked cholesterosis of the gall gladder. That is an association which one would expect but as a matter of fact one only rarely finds. It would have been interesting if we could have got his blood fats.

Dr. Chester M. Jones: Were there any stones or gravel?

Dr. Mallory: No.

A Physician: Was syphilis the cause of his arteriosclerosis?

Dr. Mallory: I think the process is almost certainly a combined one of syphilis and atheromatosis. They very frequently are combined. In some of the cases of chronic syphilis one gets the most marked atheromatous lesions. I think that is probably the situation here, but I do not believe we are justified in assuming an etiologic relationship.

Dr. Gundersen: There was strongly positive serology.

Dr. Mallory: Yes, and of course the family history fits too.

Dr. George W. Holmes: Did he have any x-rays?

Dr. Gundersen: No.

A Physician: Do you think there is any causal relation between atheromatosis and syphilis?

Dr. Mallory: I do not believe so.

Dr. Walter Bauer: Do you think this whole picture could have been caused by arteriosclerosis alone?

Dr. Mallory: No, I do not. The intimal changes in that aorta I think are purely atheroma. The changes in the aortic valve I am sure must have been syphilis; I do not see how atheroma could have done that. I am a little surprised that he showed as much clinical evidence of aortic regurgitation as he did. They could not measure his diastolic pressure. I think there is a large element of functional dilatation of the ring without a doubt.

# Editorial


# ARIZONA MEDICINE

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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.

2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. (See MEDICAL WRITING by Morris Fishbein.)

3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.

4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.

5. Submit manuscript typewritten and double-spaced.

6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.

The Editor is always ready, willing, and happy to help in any way possible.

Reply to criticisms voiced against the American Medical Association in a proposed editorial prepared and distributed by the Citizens Committee for the Hoover Report.

A recent proposed editorial prepared and distributed by the Citizens Committee for the Hoover Report criticizes the American Medical

Association for its position with respect to S. 1140, 82nd Congress. This legislation proposed that a new Department of Health be established in the Executive Branch of the government, under which all federal health services, including most of the hospital facilities of the Armed Services and all of the Department of Medicine and Surgery of the Veterans Administration, would function.

The Hoover Commission's Report, which it is alleged S. 1140 would effectuate, was presented in March, 1949, based on reports received from its Medical Task Force in January and February of 1949. Although the report did recommend, in part, the program proposed by the pending bill, the basic or primary recommendations of the commission were that:

(a) the Congress clearly define the beneficiaries entitled to medical care from the federal government and the relative priorities of such beneficiaries, and

(b) the present inconsistencies in the federal hospital construction program be resolved.

The Medical Task Force, in conducting the studies prior to the issuance of its report, found that the existing federal medical program was "devoid of any central plan" and concluded that there must be over-all planning, which would require "first a clear definition of the extent of the responsibilities, and second an organization appropriate to carry out the commitment." Although S. 1140 would establish an agency for "carrying out the commitment," the primary recommendations have been ignored.

In addition to the vital objections referred to above, the American Medical Association objects to the inclusion of the medical facilities of the Armed Services and the Veterans Administration in the new Department of Health. It is the belief of the association that such a transfer would be difficult at this time without seriously hampering the primary mission of the Armed Services and the Veterans Administration. The proposed transfer of military installations, although questionable even in peacetime, would be fraught with danger during the present emergency.

The aforementioned editorial indicated that the opposition of the American Medical Association to this legislation is directed to certain minor details in the bill. On the contrary, it is obvious from the above facts that the objections of the association are basic.

The editorial states that even the proponents of the measure are in agreement with the A.M.A.'s position with respect to the transfer of the hospitals of the Armed Services. Despite this agreement, however, S. 1140 still provides for the inclusion of the major medical military facilities in the new Department of Health.

The American Medical Association is in favor of the establishment of a Department of Health and is in wholehearted accord with the desire to effect economy in the operation of federal medical services, but it is the belief of the association that S. 1140 will not accomplish the desired results.

The American Medical Association has repeatedly pointed out the wastfulness of the present uncoordinated system of providing medical care and hospital benefits by the federal government. Testimony to this effect was presented before the Senate Committee on Labor and Public Welfare during the 81st Congress on a similar bill, S. 2008. Since that time the Board of Trustees of the association has on several occasions (most recently on Feb. 8, 1952) reiterated its belief that the best way to institute governmental economy in the use of funds and medical manpower is:

(a) to obtain a clear congressional definition of the extent of the government's responsibility for furnishing medical care with particular reference to the treatment of veterans with nonservice-connected disabilities and the dependents of service personnel; and

(b) to establish a federal board to control the distribution of beds among the several federal hospital services, to insure joint planning in the field of hospital construction and to determine the need and location of proposed new hospitals in the United States.

The editorial also leaves the distinct impression that the American Medical Association has been unwilling to discuss its position in an attempt to arrive at a satisfactory solution to the problem. This is untrue.

In response to an invitation from the National Doctors Committee, an affiliate of the Citizens Committee, representatives of the American Medical Association met with that committee on several occasions for the purpose of reconciling the divergent views concerning this legislation.

# Clinical Results* with Banthine® Bromide

(Brand of Methantheline Bromide)

## 22 Published Reports Covering Treatment of 1443 Peptic Ulcer Patients with Banthine

Comprising the reports published in the literature to date which give specific facts and figures of the results of treatment

| AUTHORS | No. of Patients | Chronic, Resistant to Other Therapy | TYPES OF ULCERS | | | | RELIEF OF SYMPTOMS (Chiefly Pain) | | | | Surgery or Complications[1] | Side Effects Requiring Discontinuance of Drug[2] | EVIDENCE OF HEALING | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Duodenal | Jejunal | Stomal | Gastric | Good | Fair | Poor | No Report | | | Complete | Moderate | None | No Report |
| Grimson, Lyons, Reeves | 100 | 100 | 93 | 7 | | | 80 | 11 | 4 | | 5 | | 47 | | 19 | 29 |
| Friedman | 15 | 15 | 14 | | | 1 | 5 | | 4 | 6[3] | | | 2 | | | 13 |
| Bechgaard, Nielsen, Bang, Gruelund, Tobiassen | 26 | 26 | 21 | | | 5 | 16 | 4 | 6 | | | | 8 | 6 | 12 | |
| McHardy, Browne, Edwards, Marek, Ward | 162 | | 162 | | | | 136 | 12 | 11 | | 3 | 1 | 14 | 9 | 7 | 129 |
| Segal, Friedman, Watson | 34 | 34 | 34[4] | | | | 14 | 13 | | | 7 | 2 | 5 | | 8 | 14 |
| Brown, Collins | 117 | 99 | 117 | | | | 97 | 7 | 8 | | 5 | 8 | 55 | 9 | 8 | 40 |
| Asher | 77 | | 65 | | 7 | 5 | 52 | 9 | 16 | | | 16 | | 9 | 21 | 47 |
| Rodriguez de la Vega, Reyes Diaz | 5 | 4 | 5 | | | | 4 | | 1 | | | | | 3 | 2 | |
| Winkelstein | 116 | 116 | 102 | 8 | | 6 | 102 | | 14 | | | | 53 | | 18 | 45 |
| Hall, Hornisher, Weeks | 18 | 18 | 18 | | | | 11 | | 1 | 6[5] | | | 18 | | | |
| Maier, Meili | 38 | 38 | 24 | | | 14[6] | 27 | 7 | 4[7] | | | | 10 | 2 | 5 | 21 |
| Meyer, Jarman | 25 | 18 | 25 | | | | 21 | | 4 | | | | | | | 25 |
| Poth, Fromm | 37 | 37 | 37 | | | | 33 | 3 | 1 | | | | 33 | 3 | 1 | |
| Plummer, Burke, Williams | 41 | 41 | 41 | | | | 36 | | 5 | | | | 38 | | 3 | |
| McDonough, O'Neil | 104 | 100 | 104 | | | | 63 | 10 | 31 | | | 11 | 4 | | 11 | 89 |
| Broders | 60 | 60 | 58 | | 1 | 1 | 35 | 19 | 6 | | | | 10 | 1 | 49[8] | |
| Legerton, Texter, Ruffin | 11 | | 11 | | | | 11 | | | | | | | | | 11 |
| Holoubek, Holoubek, Langford | 76 | 69 | 76 | | | | 35 | 27 | 10 | | 4 | 10 | 26 | | 10 | 36 |
| Ogborn | 42 | | 39 | 2 | | 1 | 42[9] | | | | | | | | | 42 |
| Shaiken | 48 | 48 | 48 | | | | 33 | 10 | 3 | | 2 | | 33 | 10 | 3 | |
| Johnston | 145 | 145 | 145 | | | | 143 | | 2 | | | 2 | 143 | | 2 | |
| Rossett, Knox, Stephenson | 146 | | 141 | | | 5 | 146 | | | | | 4[10] | 53 | | | 93 |
| TOTALS | *1443* | *968* | *1380* | *17* | *8* | *38* | *1142* | *132* | *131* | *12* | *26* | *54* | *552* | *52* | *179* | *634* |
| PERCENTAGES | | 67.8 | 95.6 | 1.2 | 0.6 | 2.6 | 81.3 | 9.4 | 9.3 | | | 3.7 | 70.5 | 6.6 | 22.9 | |

1. Not included in tabulations.
2. Included in "Relief of Symptoms" as "Poor" and in "Evidence of Healing" as "None."
3. Four had no symptoms when Banthine therapy was begun.
4. Of which seven were penetrative lesions and five partially obstructive.
5. No symptoms were present in four.
6. Two with symptoms only; no demonstrable ulcer.
7. Three were psychopathic patients and one had a ventricular ulcer of the lesser curvature.
8. Roentgen findings after treatment period of two weeks; forty-seven had duodenal deformity.
9. All returned to work within a week.
10. In these four, after relief of symptoms, Banthine was discontinued because of urinary retention.

During the past two years, more than 200 references to Banthine therapy in peptic ulcer and other parasympathotonic conditions have appeared in medical literature. Of these reports, 22 have presented specific facts and figures on the results of treatment in a total of 1,443 peptic ulcer patients, 67.8 per cent of whom were reported as chronic or resistant to other therapy. These results are tabulated above and show:

"Good" relief of symptoms was obtained in 81.3 per cent of the 1,405 patients on whom reports were available.

"Complete" evidence of healing was obtained in 70.5 per cent of the 883 patients on whom reports were available.

In all but 9.7 per cent, relief of pain was "good" or "fair." In all but 22.9 per cent, evidence of healing was "complete" or "moderate."

During treatment, 26 patients required surgery or developed complications other than ulcer which required discontinuance of the drug before results could be evaluated.

Of the remaining 1,417 patients, only 3.7 per cent experienced side effects sufficiently annoying to require discontinuance of the drug.

ACCEPTED COUNCIL ON PHARMACY AND CHEMISTRY AMERICAN MEDICAL ASSOCIATION

*Volume containing complete references, with abstracts of 39 additional reports, will be furnished on request by

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At those conferences representatives of the Citizens Committee and and its affiliated Doctors Committee indicated orally that they would be agreeable to suggested amendatory legislation which would incorporate the majority of the suggestions presented by the American Medical Association. A revised bill was subsequently prepared and submitted to the association for consideration.

After a careful study of the substitute proposal, the American Medical Association's Committee on Legislation noted that, while certain minor suggested changes had been made, the revised bill still included the transfer of the major military and all Veterans Administration hospitals a transfer opposed by the A.M.A. Also, no provisions were incorporated which would clearly define the extent of the government's responsibility for furnishing medical care, particularly to veterans with nonservice-connected disabilities and the dependents of service personnel. Neither did it provide for the establishment of a federal board to control the distribution of beds among the several federal hospital services to insure joint planning in the field of hospital construction and to determine the need and location of proposed new hospitals in the United States.

Therefore, the American Medical Association was left no other alternative but to continue its opposition to S. 1140.

Notwithstanding the validity of certain of the recommendations of the Hoover Commission at the time of the issuance of the report in 1949, such proposals are not necessarily applicable today, due in part to the hostilities in Korea and to the threat of war in various other parts of the world.

The proposed editorial is inaccurate in that it implies the official endorsement of the pending legislation by the American College of Surgeons, the American Academy of General Practice and others. Official endorsement by these organizations has not been given. Furthermore, a number of public and private agencies testified in opposition to the bill at the time of the recent hearings before the Senate Committee on Expenditures in the Executive Department. These agencies included the Department of Defense, the Veterans Administration, the Federal Security Agency, the American Legion, and the Veterans of Foreign Wars.

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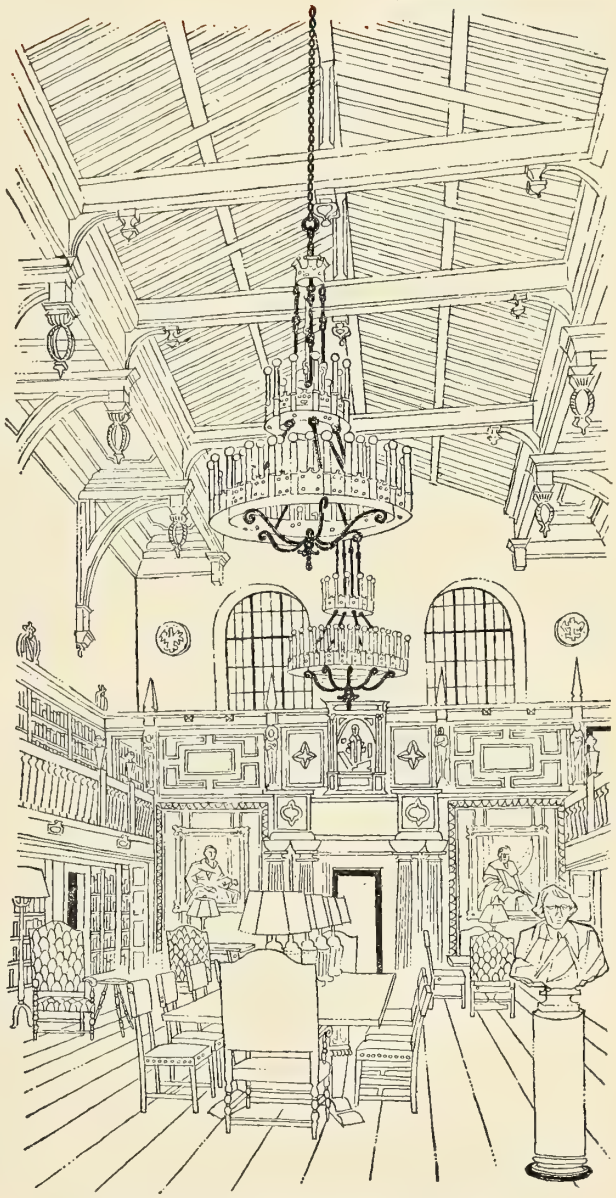
Aureomycin in daily repeated small dosage gives satisfactory serum levels, and may be continued over a long period.

Aureomycin has been reported to be clinically effective against susceptible organisms in the following conditions frequently seen by the orthopedic surgeon:
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Infected Compound Fractures • Osteitis
Brucella Arthritis • Periostitis

***Throughout the world, as in the United States, aureomycin is recognized as a broad-spectrum antibiotic of established effectiveness.***

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# THE Secretary's MESSAGE

## YOUR GRIEVANCE COMMITTEE

THE ANNUAL REPORT OF YOUR GRIEVANCE COMMITTEE COVERING IN DETAIL, CASE BY CASE, THE RESULTS OF ITS FIRST COMPLETE YEAR OF OPERATION, PRESENTED TO THE HOUSE OF DELEGATES IN ANNUAL SESSION HELD RECENTLY, IS A DOCUMENT WHICH ATTRACTED CONSIDERABLE ATTENTION. THE REFERENCE COMMITTEE ON REPORTS OF STANDING COMMITTEES WAS SO IMPRESSED WITH ITS INTERESTING AND INSTRUCTIVE CONTENT THAT IT RECOMMENDED, FOR THE EDIFICATION OF ALL MEMBERS OF THE ASSOCIATION, REPRODUCTION OF THAT PORTION OF THE REPORT DEALING WITH TIMELY SUGGESTIONS TO THE MEDICAL PROFESSION, BELOW PUBLISHED:

"IT IS THE OBSERVATION OF YOUR GRIEVANCE COMMITTEE THAT MANY OF THE COMPLAINTS FILED COULD HAVE BEEN AVOIDED HAD WE, AS PHYSICIANS, BEEN JUST A BIT MORE CONSIDERATE OF OUR PATIENTS. WE COMMEND FOR YOUR FAVORABLE CONSIDERATION, THE FOLLOWING SUGGESTIONS:

"1. AS SOON AS PRACTICABLE, TAKE THE TIME TO EXPLAIN TO THE PATIENT HIS CONDITION IN LANGUAGE HE WILL UNDERSTAND. INTERPRET YOUR FEE, THEREBY GIVING HIM THE OPPORTUNITY TO DISCUSS ABILITY TO PAY.

"2. WHERE SURGERY IS INDICATED, HAVE COMPLETE UNDERSTANDING OF FEES INVOLVED, PROBABLE HOSPITAL COSTS INCLUDING ANESTHESIOLOGY, PATHOLOGY AND RADIOLOGY. ARRANGE A CONSULTATION, WHENEVER POSSIBLE, BETWEEN THE PATIENT AND ANESTHETIST PRIOR TO OPERATION. THE PATIENT SHOULD BE MADE TO UNDERSTAND THAT THE ANESTHETIST TOO IS AN IMPORTANT PART OF THE OPERATING TEAM AND MAY EXPECT TO RECEIVE A SEPARATE BILL FOR HIS FEE.

"3. ITEMIZED MONTHLY BILLS WITH LABORATORY FEES, ETC. SEPARATED WILL ELIMINATE MANY COMPLAINTS. THE PATIENT IS ENTITLED TO KNOW WHAT HE OR SHE IS PAYING FOR. IT IS SOUND BUSINESS PRACTICE.

"4. PATIENTS SHOULD BE MADE TO UNDERSTAND THAT A CURE CANNOT BE 'GUARANTEED.' TOO MANY BELIEVE IT CAN BE AND EXPECT SUCH ASSURANCE, ONLY LATER TO BECOME COMPLETELY DISSATISFIED WITH DIAGNOSIS AND TREATMENT PRESCRIBED.

"5. MAKE A CONCERTED EFFORT TO REDUCE TO A MINIMUM THE 'WAITING TIME' REQUIRED OF PATIENTS SCHEDULED FOR OFFICE APPOINTMENTS. WHEN AN EMERGENCY ARISES, HAVE YOUR SECRETARY ENDEAVOR TO CONTACT PATIENTS BEFORE THEIR DEPARTURE FOR YOUR OFFICE, RESCHEDULING THE APPOINTMENT.

"6. IT IS A FACT THAT 'LOOSE TALK' AND 'UNGUARDED STATEMENTS' ARE THE BASIS FOR NINE OUT OF TEN MALPRACTICE SUITS."

# TOPICS OF *Current Medical* INTEREST

## RX, DX, AND DRS.

By GUILLERMO OSLER, M.D.

An improved drug for the treatment of gout and arthritis has been reported at the April California Medical Ass'n. Meeting. . . . Dr. R. W. Shaffarzick of Stanford described the use of 'PHENYLBUTAZONE', a drug developed in Switzerland. It seems to be almost a specific remedy for gout, effective to some degree in all cases of rheumatoid arthritis; it was also of value in spinal arthritis, and acute bursitis usually subsided. . . . The drug is said to have fewer toxic effects than ACTH and cortisone, with no effect on the glandular balance. . . . It is said to be 'a powerful temporary suppressor'. The best effects are on pain and inflammation.

---

**Civil Defense in the Los Angeles area has estimated the results of eight ATOMIC BOMB strikes in California, partly in order to know what provisions to make for hospital care. . . . Total casualties would reach 378,000; total requiring hospitalization (⅔) would be 252,000; maximum number of people in hospitals at one time (¾) would be 189,000. . . . The casualties wouldn't be more numerous in Arizona—just more important.**

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A decision on whether to abandon silver nitrate as a prophylaxis for gonorrheal OPHTHALMIA OF THE NEWBORN will have to come sometime, but it won't be at once. The usage is too entrenched, and a substitute is too controversial. . . . Nevertheless the silver preparation is a frequent irritant, and fails twice in a thousand cases. Penicillin, which may not be the ultimate best, has failed once in 28,169 collected cases, and in one series of 2,667, not at all.

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**Dr. Emil Bogen, a leading tuberculosis research worker in Los Angeles, has shown the logical connection between all of the drugs used for TREATMENT OF TUBERCULOSIS. . . . The sulfones, PAS, streptomycin, aldinamide, and the new isonicotinic acid hydrazide (INH) drugs all contain the benzene ring as a nucleus. . . . The connection is not a progress from one to another, since they have been found separately and often long ago. It should give a future lead for search or synthesis, however.**

---

Resistance of bacilli (in vivo) from use of an INH drug has now been reported by communication from New York. It was hoped that this might be an absent quality of the drugs, but it was predicted that it should be expected. . . . The first notable roundup on the drug effects should be reported from the national TB meetings in Boston in late May. You probably will see data in the newspapers before we can give it to you here. . . . An amazine dynamic piece of research and publication has just appeared,—The V.A. Tuberculosis section was told of the INH drugs on January 22nd; a working protocol was set up in 10 days in a dozen V.A. Hospitals; the drug was available and started by and after February 5th; an official visited the hospitals and interviewed most of the early patients; the summaries of 2 to 8 weeks of usage were sent to Washington as available; and a mimeographed report was back in the hands of the consultants by April 23rd. Truly a wonderful job of correlation. . . . However the INH drugs eventually fit into the therapy program, the early effects (2 to 4 weeks) of their use are dramatic. Fever and sputum drop; appetite and weight rise. Now we'll see the bacterial and x-ray studies.

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**NURSING HOMES now have a bimonthly journal, the 'Nursing Home Administrator.' . . . It could be a sign of more nursing homes, or a need for such a publication, or of an improvement in nursing homes. They are badly in need of a lift, in large cities, where they are hard to control. . . . The cover of a recent issue was badly chosen. It showed a patient in bed under restraint by a new kind of harness.**

---

A paradox of pharmacology (not clear to this here scientist) is a new Merck drug, 'Nalline', said to be a specific ANTIDOTE FOR OVERDOSAGE OF MORPHINE, its derivatives, and meperidine, and methadone. . . . The paradox is that the drug is an opium derivative, and requires a narcotic Rx. . . . It is given parenterally, preferably by vein for fast (2 min.) action. It is a strong respiratory stimulant in narcotized patients.

---

**The World Health Organization has been surveying European countries for tuberculosis infection, as a prelude to BCG VACCINATION. The incidence at the age of 20 years is so high as to be nearly universal. . . . The chief result, other than epidemiological data, seems to be the slicing of the good old tuberculin test into tiny pieces. Nothing seems certain when the statisticians move in.**

---

Dr. Kenneth Eastlick of the University of Michigan school of dentistry pleads again for a slow hand in pulling 'bushels of teeth' unnecessarily. . . . Dental research confirms the belief that pyorrhea does not condemn teeth. Treatment of infection and 'splinting' of the affected teeth may save them. . . . The connection of possible peridental lesions, with inflammation elsewhere, is so much less certain that another reason is removed.

. . . Strangely, the belief in extraction dies hardest among patients, not dentists. They have heard of the reasons for, not against it.

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**Dr. Frank Courtwright has dissected the meaning of the phrase 'PROFESSIONAL COURTESY'. He finds more to it than a remission of charges for service to another doctor. . . . The physician, he says, should survey his courtesy towards the people with whom he works—and probably revise it. (Do you throw instruments? Are you sorry? Are you ever wrong? Does your lack of sleep show?) . . . Courtesy to patients could often be improved. (Do you tell your patients anything? Enough? Readily?) . . . Courtesy to other physicians can exceed a casual greeting in the corridor, or a referred patient. (Do you say 'Who in the world prescribed bifocals for you? or 'Why would a surgeon operate on such a condition!)**

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Dr. B. B. Stamell of Detroit takes a refreshing pediatric approach in the Journal of the Michigan State Medical Society. He writes on 'The Emotionally HEALTHY Child' . . . Certain traits must be developed, certain behavior must be cultivated, and certain needs must be satisfied in the home life. . . . The list which he surveys includes love, security, a moderate protection, a minimum of anger, a lack of family discord, a sense of worth and self-respect and self-esteem, with sufficient approval, acceptance of individuality, a need for direction with a balance of limitations and of pressure, the use of play for development, the culture of independence and adaptability. . . . This list is probably as complex and disturbing to many physicians as it is to most parents. It is the target, however.

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**More than 3 years ago a case was described in the now-discontinued section 'ARIZONA MEDICAL PROBLEMS'—Dr. N. C. Gilbert of Chicago (then editor of the Archives of Internal Medicine and medical chief at Northwestern) wrote the case-analysis for the problem. . . . The problem was a difficult one and the diagnosis was "a Collagen disease, probably dermatomyositis' . . . A progress note can now be made. The patient found that rest gave her great relief from pain in the abdomen and in the extremities, but her resttime was limited because she had to continue work. Trials of cortisone produced symptomatic relief, tho it was transient. . . . At present the blood pressure, once elevated only with work or tension, often goes to 250 mm. The skin lesions are not active if the patient is not exposed to much sun. She has moved to the costal area of California!) . . . The diagnosis has apparently been confirmed, and the progress is as expected, tho of a chronic sort.**

## REPORT OF THE CHAIRMAN OF COUNCIL

To date, two meetings of the Council have been held, and both were well attended. The fact that it was necessary to call only two meetings since May, 1951, to conduct the business affairs of this Association, is an eloquent testimonial to the efficiency of our Executive Secretary, Robert Carpenter, and his staff in the central office.

At these meetings, the financial and other business transactions of the Association receive careful consideration. I am impressed by the manner in which disbursement of funds is handled by a group of doctors; physicians are supposed to be poor businessmen! However, you may be assured that the funds of this Association are jealously guarded by your own colleagues, duly elected to represent you.

Matters of legislation pertaining to public health and the practice of medicine and other healing arts are also discussed. Your Council is kept fully informed of pending legislation at all times by the Legislation Committee headed by Dr. Jesse D. Hamer, and by our attorney, Edward Jacobson. This Council favorably reviewed and supported legislation to provide aid, both moral and financial, to Arizona residents who apply for admission to medical schools. The Council also favored the proposed Amendment to the Medical Practice Act, and the proposed Nurses' Practice Act, and the Act creating a Board of Physical Therapy Examiners.

Not all of the actions of the Council are those of formulation of policy. In this democratic organization, The Arizona Medical Association, Inc., the formulation of policy belongs rightfully to the House of Delegates. However, it must be realized that the members of the Council are also your duly elected representatives, who act in your interest and in the interest of providing good medical care and health services to the people of Arizona. The reports of the various Committees and Boards are also considered in detail. The Committee on By-Laws of the Constitution, of which Dr. Edward M. Hayden is Chairman, is working on a draft of Articles of Incorporation of this Association, and we hope to have these ready soon for your consideration and approval. Group coverage for Health and Accident Insurance, available at reduced premium to all members of this Association, is also being deliberated. Action on this

matter is being deferred until we are able to analyze all submitted proposals. Your Chairman of the Council feels that the Council made a wise choice in its action of retaining the firm of Snell and Wilmer as attorneys for this Association. I wish to commend Mr. Edward Jacobson, a member of that firm, for his services in behalf of this group. I also express my sincere thanks to my colleagues in this Council for their guidance, their cooperation, and their unselfish sacrifices in giving up their week-ends of rest to travel long distances, and giving, without complaint, of their services—to all of us.

Respectfully submitted A. I. Podolsky, M.D.
Chairman — Council

———o———

## 1951-52 Annual Report of Secretary

During the fiscal year 1951-52 not yet completed, seventy (70) new medical doctors were accepted into membership of our component societies and this Association. Of this number, 29 were admitted into Maricopa, 20 into Pima, 7 into Yuma, 5 into Yavapai, 3 into Pinal, 2 each into Cochise and Coconino, and 1 each into Gila and Navajo County Medical Societies. Total membership as of this writing is 667 for a net gain of 47 over last year. For the knowledge of the members, I am listing below by county medical society, of which there are fourteen (14), membership in each:

| | | | |
|---|---|---|---|
| Apache | 3 | Mohave | 2 |
| Cochise | 19 | Navajo | 8 |
| Coconino | 10 | Pima | 193 |
| Gila | 18 | Pinal | 16 |
| Graham | 6 | Santa Cruz | 8 |
| Greenlee | 5 | Yavapai | 21 |
| Maricopa | 336 | Yuma | 22 |

Further broken down into membership classifications, there are 611 "Active" (of which 10 are designated "Fifty Year Club"), 47 "Affiliate" (of which 17 are "Military"), and 9 "Associate" members. As we multiply, so grow our responsibilities to the profession and the communities in which we serve.

The Council held three meetings here in Phoenix, June 3, 1951, January 13, 1952, and March 30, 1952, each of a full day's duration, and is scheduled to meet again on April 29. Well attended with representation from all quarters of the state, the business of your Association continues to be handled with efficiency and dispatch. Matters of vital concern to the medical profession were discussed and decisions reached which will, no doubt, be the subject of report by your chairman of Council. Outstanding was its interest and handling of the legislative program during the Second Regular Session of the Twentieth Legislature. Here again the details will appear in the report of the Legislation Committee, but it is worthy of mention that we experienced another successful year under the able guidance and leadership of our attorney. The Constitution and By-Laws Committee has devoted considerable time and effort toward the revision of our By-Laws, approved at our last meeting. It is anticipated the House of Delegates will give deliberation to its final adoption during the forthcoming Annual Meeting.

The Professional Board met in Phoenix on October 21, 1951, and again on March 16, 1952, with anticipation of a further meeting during the Annual Meeting just ahead; the Public Relations Board held meetings in July and November of last year; and the Grievance Committee held four meetings in 1951. Each has prepared a report of its stewardship and accomplishments which will be presented to the House. The Arizona Advisory Committee to the Selective Service System has functioned effectively throughout the fiscal year and the Civil Defense Committee has stepped up its pace, attending many meetings, the result of activation of the State Civil Defense Agency. The Medical Defense Committee has to its credit the successful trial of an important malpractice suit and stands ever ready to defend our members when called upon so to do. The Industrial Relations Committee has had a busy year and out of its deliberations it is anticipated will come a revised fee schedule more in keeping with the changed economic conditions prevailing. This latter phase will be a topic of discussion during the coming Scientific Sessions.

The established policy of filing with the Secretary of each of our component societies a summary of the proceedings of Council and our various Boards and Committees, prepared through this office, has been continued. The membership has been similarly informed through the Journal.

ARIZONA MEDICINE, the official Journal of the Association, I am proud to state, continues as one of the outstanding scientific publications among the constituent state associations. Circulation has reached 3328 copies monthly, and the Business Manager is due credit for his devotion to its progress. It is also interesting to note in

connection with the publication of ARIZONA MEDICINE that exchange copy with forty-three foreign county medical society libraries has been effected, resulting in periodical requests for reprints of our scientific articles. The Editorial Board has functioned effectively and as Editor I am most grateful for their untiring assistance.

The Executive Secretary has given full cooperation to and effective administration of the duties of this office. As we grow, so mounts the burdens and tasks involving voluminous detail in the conduct of our business. With a staff of two competent stenographers and many long hours of effort, I can report with satisfaction that we are obtaining results. The conduct of the Annual Meeting alone is a continuing business process from one session to the next and each seems to surpass the previous one which must be a source of pride to all of us. He has attended all meetings of the Maricopa County Medical Society, including its Grievance Committee, easily accessible due to location here in Phoenix; two meetings of our Pima County Medical Society; and one each of our Yuma and Yavapai Societies. It is his intention to continue this program of visitation and expand it to cover all societies within the next fiscal year as opportunity affords. Likewise, he attended the annual meeting and clinical session of the American Medical Association and meetings too numerous to mention involving civic, health and allied societies whose activities are of interest to the medical profession, keeping us well informed. Space will not permit of a detailed report of his activities, suffice to say, that we are receiving a good accounting of his stewardship.

In conclusion, it is my observation that the Officers and Council of our Association, together with the members of our various Boards and Committees, have completed another year of successful administration and accomplishments. Each is well aware of his responsibilities and has served with distinction and untiring energy. It has been a privilege and pleasure to have served you and I hasten to take this opportunity to again thank each and all of you for your continuing support, cooperation and indulgence.

Respectfully submitted,
Frank J. Milloy, M. D.
Secretary Arizona Medical Association
Editor Arizona Medicine

## PRESIDENT'S REPORT

Mr. Speaker, members of the House of Delegates: The state of your Association is excellent.

The purpose of this report is to acquaint you with some of the activities during the past year, and to emphasize some of the work that has been done by your officers and committees, and to propose some problems that must be given consideration.

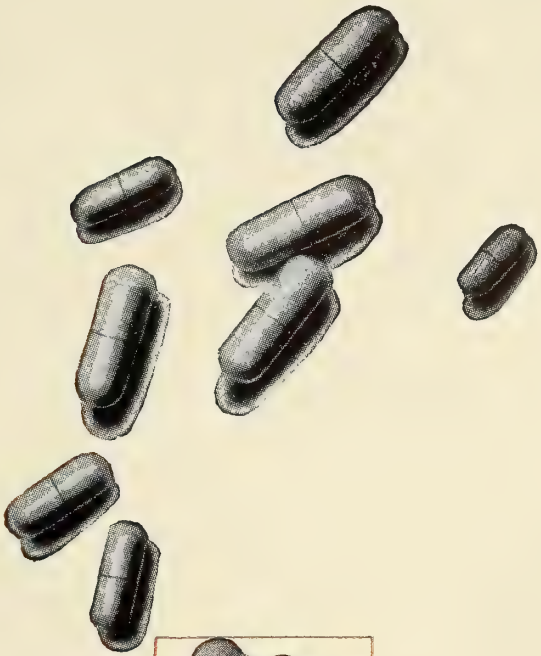
The accomplishment of projects this year has been the result of the untiring efforts of many of your officers, committee chairmen and committee members, and cannot in any way be attributed to one individual or the influence of any one individual.

The burden of carrying on the day to day business of the Association during this past year has been born by your Secretary who has had to devote a part of each day to the transaction of Association business. Our very capable Executive Secretary has made it possible to handle the volume of business in an orderly manner.

Your Vice-President has spent many hours revising our Constitution and By-Laws, which must be adopted at this meeting.

The Treasurer has devoted an enormous amount of time during the year, not only to the routine of bookkeeping but in trying to devise ways and means of making your dollars stretch over a long list of activities. The genes for such a characteristic have apparently been handed down from father to son. When you quickly analyze the Treasurer's report, and rapidly calculate that it is entirely wrong, keep in mind the facts that *only* paying members of the Association are reflected in the bank balance; don't overlook the continued depreciation of the dollar, increasing costs, and the inevitable increase in salaries. The ability of your Treasurer to keep the books out of the red this year was partly due to the fact that several of our Standing Committees did not use their allotted budget. Our Association is at that awkward stage when it is really just a baby, but is expected to keep up with the larger Associations, both on a state and national level. In considering a budget for the coming year, consider seriously the recommendations for your Treasurer. An expenditure which has been little understood by many is the allotment to the Woman's Auxiliary to the Arizona Medical Association. Just recently this has been increased to an amount that permits that organization to function with some freedom.

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If nothing more were accomplished than Public Relations, the cost to the Association would be cheap. Be cautious about the dissipation of the Medical Defense Fund. This sum is too small for many of the proposed plans, but still is large enough to do a lot of good for the Association if wisely used. All the foregoing leads to the consideration of the appointment of a Budget Committee to function throughout the entire year, and to the possibility of increasing our annual dues sufficiently to insure a margin of safety commensurate with increasing costs and activities.

Your Council has met throughout the year to transact the necessary business. You may be assured that each member has sincerely guarded the democratic principles of your organization, and at no time has there ever been any doubt that any member of the Council or the Council as a whole has attempted to further anything that would not benefit the entire Association, or that might be objectionable to the members of the House of Delegates, or to the individual County Societies.

The district Councilors and Councilors-at-Large have not been as active as they should have been. However, with the adoption of the new By-Laws, perhaps these duties will be fulfilled.

The Professional Board has been handicapped by lack of a Chairman to direct it until the appointment of the present Chairman, and it is hoped that this very important Board will function with the same enthusiasm that it has in past years. Individual members of the Board, however, are to be complimented for their work.

As you know, Public Relations has been stressed from the national level, and this will continue to be one of our best weapons against Socialization. Every member of the Association is a member of this Board, since good Public Relations start with each individual doctor.

Time will not permit a lengthy report on all our Committees. The Committees on History and Obituaries, Industrial Relations, Medical Economics and Publishing have functioned well.

The Scientific Assembly has grown too large and too important to be handled by anyone inexperienced in this procedure. It is conceivable that sometime the President-Elect will have neither the experience nor the ability required to handle such an assignment. The By-Laws, as they stand, designate the President-Elect to be Chairman of the Committee on Scientific Assembly. Should we consider the appointment of an experienced, capable Chairman for this Committee by the Council for a three-year term, and have the President-Elect an ex-officio member?

The Arizona Advisory Committee to the Selective Service System is to be commended for accomplishing a very difficult and distasteful duty, which required much time, energy and travel in the performance of this assignment.

Members of the Association who have worked on Civil Defense are also to be recognized for their arduous, and at times confusing, task.

Your Committee on Legislation has worked hard this year, but their efforts have paid dividends. The Association is very fortunate in having a Committee that is experienced in legislative matters and capable of carrying through in spite of many reverses. The Chairman of this Committee with the help of the Secretary, the Executive Secretary and members of the Association who responded when called upon have placed the Association in a rather enviable position. Our legal advisor is responsible in no small measure to the success of our program this year. Through his insight in guiding the action of our Committee, we were successful in our undertaking. Let us remember also that we were blessed with a Governor and many Legislators who would listen to our problems and would consider them with understanding and reason. A word of caution must be injected into the discussion regarding legislation. Each member of the Association should be familiar with the procedure as set forth in our By-Laws regarding Legislation and the Legislative Committee, and particularly to that portion which specifically states, quote: "No County Society, group of members, or individual members shall advance any medical legislation as representative of the view points of the Arizona Medical Association, Inc., or of any of its component societies, without obtaining the consent of this Committee," unquote. This in *no* way construes the idea that the Association is attempting to be dictatorial. It is merely a means of having one Committee responsible for our actions, and to prevent any such unhappy circumstances as might result should separate committees or groups of individuals attempt to further legislation along divided lines and opinions, thus leaving serious

doubt in the minds of the Legislators as to just what the Medical Profession really wants.

Your Grievance Committee has functioned well, and is beginning to show results in improved Public Relations. The importance of this Committee will grow as it becomes older and better established.

With deep humility, I thank each officer, each member of the Council, each committeeman, and individual member and our two "adopted" members, our Executive Secretary and our Legal Advisor, for their help during the past year.

Respectfully submitted,

Harry T. Southworth, M. D.
President

———o———

## PERSONAL NOTE

*Dr. William Snyder* of Phoenix was certified as a Diplomate of the American Board of Dermatology and Syphilology at their recent examinations in Chicago.

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## LEGISRATION COMMITTEE
## 1951-52 Annual Report

The Legislation Committee of this Association is pleased to submit its Annual Report relating to its activities before the Twentieth Legislature of the State of Arizona—Second Regular Session.

*H.B. 22—Medical Practice Act Amendment—Approved*

Drawn with the cooperation of the Attorney General's office, this Bill encompasses all of the possible grounds for suspension, refusal or revocation of a license by the State Board of Medical Examiners based on the strongest comparable statutes of the states of New York, New Jersey, Michigan, Minnesota, Illinois, California and Massachusetts. Briefly, it provides for such suspension, refusal or revocation on the grounds:

(a) Having professional connection with, or lending one's name to an illegal practitioner of medicine or any of the healing arts. (The introduction of this Bill alone was sufficient to cause "El Docteur" to move to New Mexico).

(b) Gross malpractice resulting in death of a patient.

(c) Fraudulent representation that a manifestly incurable condition of sickness, disease or injury of any person can be permanently cured or that a curable condition of sickness, disease or injury can be cured within a stated time if such be not the fact.

(d) Any conduct or practice contrary to recognized standards of ethics of the medical profession, or any conduct or practice which constitutes a danger to the health, welfare or safety of a patient or the public.

(e) When the holder of a certificate is mentally or physically unable safely to engage in the practice of medicine and surgery.

(f) When the holder of a certificate has been declared insane by a court of competent jurisdiction and not thereafter having been lawfully declared sane.

(g) When any condition exists which impairs the intellect or judgment to such an extent as to incapacitate him for the safe performance of his professional duties.

The Bill also provides mechanics for judicial review and appeal of any finding of the State Board of Medical Examiners in such hearing.

This, the principal piece of legislation of our Association for the year 1952, passed with the "emergency clause" attached, was signed by the Governor on March sixth and became Chapter 16 of the Session Laws of the Second Regular Session of the Twentieth Legislature.

*State Hospital Board*

Arising out of and as a part of the legislative activity on the Bill hereinabove first mentioned, the doctors conferred with the Governor during the Session of the Legislature on certain of the medical aspects at the State Hospital. After many conferences with certain legislators and with the Governor, it was agreed that the Governor would suggest to the State Hospital Board that it invite the doctors to appoint a five-man advisory committee. This committee would act in an advisory capacity to the Board on all medical aspects of institutional care of the patients.

*H.B. 266—Providing for Compact for Western Regional Cooperation in Higher Education—Approved*

At the last Annual Meeting of our Association, the State Medical Council requested that the Legislation Committee confer with the Governor and the Board of Regents and other interested parties to explore the possibilities of effecting appropriate legislation which would permit the State of Arizona to join the Compact for Western Regional Cooperation for Higher Education. This action originally was the result of agitation therefor by both our Pima County doctors and the Professional Board of this Association, later to be likewise supported by our Maricopa County doctors.

The Governor manifested a receptive interest in this project and we have reason to believe was responsible for securing the support of the Board of Regents and many of the legislators. As a result of his interest and efforts by our Counsel and Legislation Committee, H.B. 266 ratifying and approving the Compact for Western Regional Cooperation for Higher Education was introduced during the latter part of the Session, approved by both Houses of the Legislature with the "emergency clause" attached and approved by the Governor on March twenty-fifth to become Chapter 104 of the Session Laws of the Second Regular Session of the Twentieth Legislature.

*H.B. 10—Board of Physical Therapy Examiners Approved*

H.B. 10 creating a Board of Physical Therapy Examiners was signed by the Governor on March 12, becoming Chapter 37 of the Session Laws

of the Second Regular Session of the Twentieth Legislature. This was the third piece of legislation endorsed by the Medical Association.

It is particularly interesting and significant that in spite of the fact that this Legislature and the legislative majority thereof was opposed to the formation of any new boards, and in spite of the fact that in the first ten days of the Session, bills were introduced to create fifteen new boards most of which were never even given serious consideration, those wto boards which the Medical Association endorsed (being this one and H.B. 2 described below) were created. I am not quite certain, but I believe that ours were the only two new boards created.

*H.B. 2—Arizona State Board of Nurses Registry Approved*

H.B. 2 providing for the Arizona State Board of Nurses Registry and nursing education was signed by the Governor on March 13, becoming Chapter 39 of the Session Laws of the Second Regular Session of the Twentieth Legislature. It does not carry the emergency clause. It sets up proper licensing and supervision of both registered and practical nurses and, as indicated in the discussion of H.B. 10 above, was, I believe, the only new board created with the exception of H.B. 10.

*H. B. 100—Practical Nursing—Disapproved*

H.B. 100 provided for a separate licensure board for practical nurses and was not approved by the Medical Association for the reason that it was more properly covered in H.B. 2 above.

*H.B. 80—Board of Collection Agent Examiners Disapproved*

H.B. 80 creating a board of collection agent examiners, designed technically to "clean up" the collection agency business, was referred to the Medical Association's counsel for inspection in order to see whether it in any way impeded the activities of the Bureau of Medical Economics run by the Maricopa County Medical Society or in any other way affected the collection of medical bills. It was determined that the Bill, though not apparently harmful, might be construed bythe board in such manner as to be obstructive to effective collection of medical bills by doctors or their agencies.

*H.B. 156—Medical Herbalist Board Disapproved*

H.B. 156 created a new form of shoestring medicine called Medical Herbalists, setting them up with a board, examinations, qualifications, and the right to practice, being somewhere half way between chiropractors and naturopaths. Our counsel was instructed by the Association to, if possible, defeat the Bill. The Bill never reached the legislative floor for action.

*H.B. 162—Laboratory Technicians Disapproved*

H.B. 162 provided for a Laboratory Technicians Board, licensure, etc. The State Association's Council, together with the Maricopa and Pima Counties' Medical Societies and the Arizona Society of Pathologists, disapproved this Bill. It failed of passage.

*H.B. 146—Exempting Chiropractors from the Basic Science Act—Disaproved*

H.B. 146 was designed to exempt the chiropractirs from the Basic Science Act. This Bill had a tremendous amount of pressure behind it for passage. The defeat of this Bill required several reports to legislative leaders and numerous conferences with the chiropractors' attorney, Mr. Stanley Jerman. Had the Bill passed it would have opened the door to a parade of exemptions from the basic Science Act contrary to the best interests of our Association and the people of Arizona.

*H.B. 147—Increasing Qualification of Chiropractors—No Action*

H.B. 147 purposed to increase the qualifications for chiropractors to become licensed to practice in the State of Arizona. It was loaded with gimmicks which, among other things, allowed for a chiropractor to be licensed on the basis of experience satisfactory to the board without any education whatsoever. Your counsel had the attorney for the chiropractors himself submit an amendment clearing ad correcting all of these gimmicks, after which time no objection was made to the Bill. The Legislature however, clearly understood how contradictory this Bill was to the chiropractors' attempted exemption from the Basic Science Act and seeing the cast of bad faith in the entire chiropractic attempt, did not allow the Bill to clear.

*H.B. 168—Amendments to the Naturopathic Practice Act — Disapproved*

This Bill provided for all of the amendments which the naturopaths had asked for in their act last year with the exception of the right to practice obstetrics. Affirmatively stated, the naturopaths were requesting the right to use all drugs and minor surgery with no further edu-

cational requirements whatsoever. The naturopaths succeded in bringing tremendous pressure on the Legislature to pass this act this year, but our counsel had many conferences with all parties concerned and nally submitted a brief to the Legislature on the entire subject. This detailed brief was sufficient, apparently, to cause the defeat of this bill.

*S.B.* BR—*State Laboratory Appropriation Approved*

S.B. 28 created appropriations for additions to the State Laboratory and at various times disbursement of that Laboratory into several units to be located outside of Phoenix. Our counsel was asked for Association aid in order to keep the State Laboratory entirely in Phoenix which, in this instance and at that time, had to be refused on the basis that it would endanger the rest of the Association's legislative program. The Bill with the "emergency clause" attached was passed and signed by the Governor on March 26.

Our score is "perfect" for this Second Session of the Legislature in which we are humbly proud. Your Legislation Committee wishes to express its grateful appreciation to the Governor, members of the Twentieth Legislature and others of our Association, with special commendation to our attorney, Mr. Edward Jacobson, whose wise counsel and able leadership guided a successful course, each contributing much of their time and effort in the interest and support of sound health legislation.

Respectfully submitted,
Jesse D. Hamer, M. D.
Chairman — Legislation Committee

*Addendum No.* 1:

It would be amiss not to say a few words regarding national legislation. The Washington Office of the American Medical Association, through very efficient and effective reporting, keeps this Committee well informed and abreast of all legislation before the Congress of the United States affecting or relating to the practice of medicine. Your Committee in cooperation with a like committee of AMA has again displayed team-work to our mutual advantage in effecting favorable action on several important national measures.


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John Maxwell Chamberlain, M.D., Associate Surgeon, Columbia Univ. New York City.
Arthur C. Curtis, M.D., Prof. and Chairman Dept., of Dermatology and Syphilology, University of Michigan.
Walter A. Fansler, M.D., Clinical Prof. of Surgery, Univ. of Minnesota.
George T. Harrell, M.D., Prof. of Medicine and Head of Dept.; Wake Forest College, The Bowman Gray School of Medicine, Winston Salem, N. C.
Bernard J. Hanley, M.D., Clinical Prof. of Obstetrics and Gynecology, Univ. of Southern California, Los Angeles.
Chevalier L. Jackson, M.D., Honorary Prof. of Laryngology and Broncho-esophagology, Temple Univ., Philadelphia.
Charles A. Janeway, M.D., Thomas Rotch Prof. of Pediatrics, Harvard Medical School, Boston.
Daniel B. Kirby, M.D., Prof. of Ophthalmology, New York University College of Medicine, New York City.
William B. Kountz, M.D., Prof. of Gerontology, Washington University, St. Louis.
Francis L. Lederer, M.D., Professor and Head of Dept., of Otolaryngology, Univ. of Illinois, Chicago.
Albert N. Lemoine, Jr., M.D., Prof. of Ophthalmology, University of Kansas, Kansas City, Kans.
Victor F. Marshall, M.D., Associate Prof. of Clinical Surgery (Urology), Cornell University, New York City.
John Parks, M.D., Professor of Obstetrics and Gynecology, George Washington University, Washington, D.C.
John M. Sheldon, M.D., Associate Prof. of Medicine, University of Michigan; Executive Committee, American Academy of Allergy.
James H. Wall, M.D., Associate Prof., Clinical Psychiatry, Cornell University, New York City.
C. Stuart Welch, M.D., Prof. of Surgery, Tufts Medical College, Boston.
Harry M. Weber, M.D., Associate Prof., Radiology, Mayo Foundation Graduate School; Chief of Section on Roentgenology, Mayo Clinic.

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THE HOSPITAL BENEFIT Bulletin

Special Published Bi-Monthly by the Hospital Benefit Association, First Street at Willetta, Phoenix June, 1952

**Question QUIZ**
**Do you know the answers?**

**Q. How many Arizonans were members of the Association when it was organized seven years ago?**

A. 514.

**Q. How many Association members are there today?**

A. Almost 35,000.

**Q. How much did the Association pay out in 1951 on hospital and surgical bills?**

A. More than a quarter of a million dollars.

**Q. May Association members choose their own hospitals and physicians?**

A. Yes. Member benefits are paid to any licensed hospital or to any physician (M.D.) anywhere in the world.

# Association Home Office Moved to New Location

The Hospital Benefit Association moved its Home Office into new, larger quarters at First Street and Willetta, Phoenix, on May 19. Due to a 700% increase in membership in the last four years, additional space was needed for the personnel required to take care of the increased volume.

## Move Will Help Maintain Prompt Payment

In 1951, there was a 50% increase in the amount the Association paid on members' hospital and surgical bills. In order to keep up its record of prompt payments to physicians and hospitals, the Association's Underwriting Department has been expanded in the new location and will be able to handle additional increases.

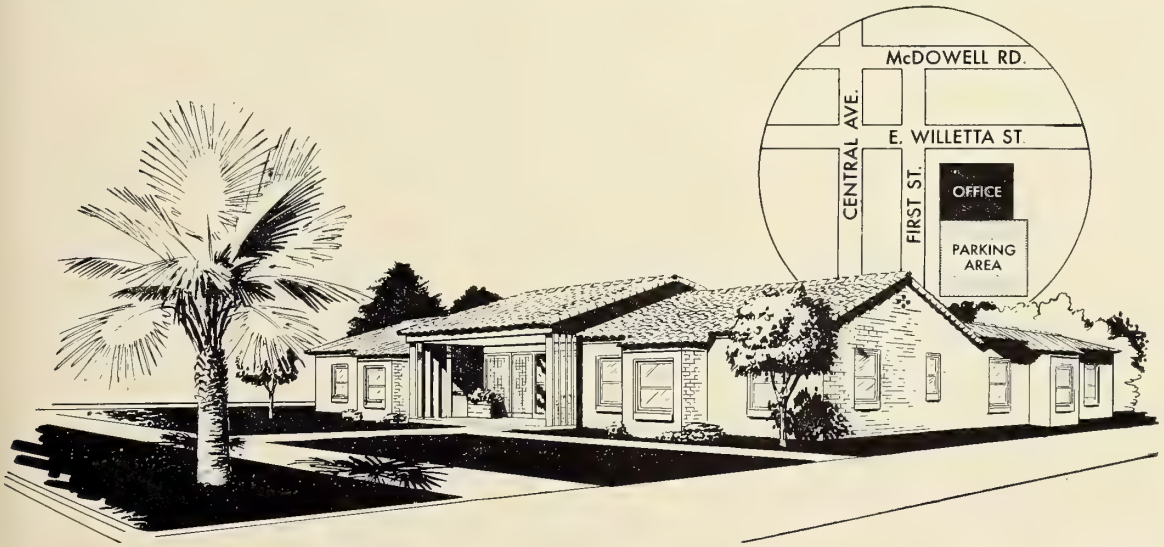
## Two Branch Offices

In addition to the new Home Office at First Street and Willetta, the Association will continue operation of a downtown office at 407 Professional Building, Phoenix. This office will be maintained for the sole purpose of receiving membership dues. All records pertaining to hospital and surgical benefits have been transferred to the First Street at Willetta office.

The Association's Tucson office at 706 Valley National Building will also be retained.

## Physicians' Cooperation Helped

The Hospital Benefit Association appreciates the cooperation of the physicians of Arizona in helping make this growth possible, and your suggestions for improving its service will be welcomed.




**Attractive new Home Office of the Hospital Benefit Association, First Street at Willetta, Phoenix. Location of office is shown on map. James S. Mecham, Phoenix, was the general contractor.**

## PUBLIC RELATIONS BOARD
## 1951-52 Annual Report

During the year it has been found necessary to discontinue publication of the "Health Activities Bulletin" with completion of the June, 1951, edtion. Most of you will recall that this public relations media was designed to bring to the people of Arizona, timely health subjects and topics of interest in keeping with the rapidity of medical progress on both the local and national levels. The "new look" or revised edition was developed for release on a bi-monthly basis in anticipation of a 10,000 circulation throughout the state, and at no cost to the Association, supported through paid advertising. The goal was never achieved and the publisher requested and was granted contractual release, the result of his inability to obtain sufficient advertising to meet expenses. An advance loan of $2,500 by the Association to the publisher is presently being satisfactorily amortized. Effort is being continued to reactivate this project; however, despite numerous conferences and search for a qualified publisher, the objective has not been reached to-date. Finances do not permit underwriting the entire cost by the Association. With rising labor and material costs, an outlay of approximately $2,200 per issue would be required. Reducing the size of the bulletin and circulation would achieve a lesser expenditure but it has always been felt that reduction in circulation below a certain minimum would make the value of the endeavor questionable. In any event, the cost seems prohibitive without supporting advertising.

Our second discouragement was the discontinuance of the column "To Your Health" in the Sunday edition of the Arizona Republic. Medical subjects prepared and contributed by the membership for lay consumption appeared in the local press for an extended period of time. In canceling this privilege, effective in April, 1951, the publishers reported that newsprint shortage necessitated such action. Some of us, however, believe that lack of reader interest and appeal is more probably the underlying cause.

The Board met in July, 1951, and again during the latter part of November when Mr. Lawrence W. Rember, Field Director of the Public Relations Department of A.M.A., spent several days with us reviewing our program and making us all more closely aware of our mutual objectives.

Your Chairman along with the Secretary and other members of the Association, including the Executive Secretary, attended the Fourth Annual Medical Public Relations Conference held in Los Angeles, December second and third, in conjunction with the AMA Clinical Session. The interest in this meeting was manifest by the large and growing attendance each year from every section of the country. "Joining Forces for Better PR" was the theme with emphasis on the "grass roots" level. Review of major medical and public opinion surveys undertaken during the year was presented, followed by numerous panel discussions on what is considered the No. 1 PR problem today, "The Cost of Sickness." While there remains much to be accomplished to improve the doctor-patient relationship, it is worthy of mention that the establishment of effective "Emergency Call" systems, of necessity on the local level, and continuance and expansion of "Grievance Committee" activities, continue foremost nationally in PR objectives to be achieved. Arizona is far advanced in these accomplishments.

A "speakers panel" maintained, made it possible to satisfy all requests received from civic, educational and society groups to supply medical doctors to address them on selected health subjects. Likewise, participation on radio and TV programs was arranged. In this latter field, development of a medical program as a public service is being given serious consideration.

Distribution of "Your Doctor" pamphlet continued and received national recognition. Aside from gratifying response and extensive distribution within the state through the cooperation of Association members, many states were supplied with copies for review and local distribution, particularly, Pennsylvania, the result of AMA "PR Doctor" promotion. It is possible we may be called upon to consider a "reprint" in the new year.

Several local press conferences were held during the year and it can be stated there has been marked improvement through better understanding in local medical news reporting. Development of an annual press-radio conference on a sectional state-wide basis will be given high priority in proposed activities of your Board in the immediate future. Recognizing the mutual, ethical, moral and legal responsibilities of the medical profession, the press and the radio to the public, the Colorado State Medical Associa-

tion several years ago undertook such a project in the interest of improving press relations. There followed, in due course, the establishment of a "Code of Ethics", now in practice, heralded by all participants as an important medium of mutual understanding and cooperation. Its success has commanded national interest and many state associations are now pursuing a similar course or being urged so to do.

During the current fiscal year a sum of $4,000 was appropriated to the Board of Public Relations for its work. Through judicious administration, it is not anticipated this entire sum will have been expended by the close of this term. The forces of socialism are less apparent and present today and we must be ever alert and ready to meet whatever problem may lie ahead. Public relations is a continuing process as important today and tomorrow as yesterday. Its activity should be continued and expanded consistent with need and available finances. We would recommend an appropriation no less than that current for the new fiscal year.

Respectfully submitted,
William B. Steen, M. D.
Chairman — Public Relations Board

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# Woman's AUXILIARY

## CONVENTION REPORT

The twenty-second Annual Convention of the Woman's Auxiliary to the Arizona Medical Association convened in Phoenix on May 1 and 2. One hundred women registered during the two days and almost every county in the State was represented. The weather was perfect and thanks to the efficient planning of Mrs. Rudolph and her Convention chairman, Mrs. George A. Williamson and Mrs. Harry J. French, the business sessions moved smoothly and the entertainment was delightful.

The Brunch, which was held on Thursday morning at the Phoenix Country Club, was attended by eighty-five members, despite the early hour. After a delicious meal, Mrs. Rudolph opened the first session of the Convention with a few words of greeting. Dr. George Hunter Hall, pastor of the First Presbyterian Church of Phoenix, gave the Invocation, following which Mrs. Thomas Woodman, immediate past President of Maricopa County Auxiliary welcomed the members to Convention and urged them to prize dearly their Americanism, the freedom of medicine and private enterprise and the privilege of exercising their power to vote. We should all pledge ourselves to the task of going and getting others to the polls to vote for a government that will see to it that our Freedom is preserved. Mrs. Donald E. Nelson, of Graham County Auxiliary gave the response.

The reports of the State Officers were streamlined to the point of brevity, but plainly showed the splendid work which had been accomplished during the year. Mrs. William F. Schoffman, President-elect, reported that she had attended the Conference for Presidents and Presidents-elect in Chicago in November and had given her report on this meeting to all County Auxiliaries.

The State Auxiliary closed the year with 394 paid members, an increase of 44 over last year. Three new Counties were organized, bringing the total of County Auxiliaries to seven. A NEWSLETTER was inaugurated this year and sent to the wives of all doctors-at-large. It was voted to send the letter next year to all doctor's wives throughout the state and it is hoped that a correct list of home addresses may be obtained in order to be sure that the women receive their copy and thus keep informed of happenings on county and state levels.

Today's Health chairman reported 338 subscriptions sold, an increase of nine over last year. Pima and Yavapai counties placed fifth and sixth in their groups in the National contest. Bulletin chairman reported that 147 Bulletins were purchased by members this year, an increase of seven over last year.

Public Relations and Health chairmen reported that four out of seven counties sponsored the Radio Health Program and plans are being made to carry on with these programs next year. These counties were Pima, Graham, Gila and Yavapai. Nurse Recruitment was the project of Maricopa and Pinal counties and will be continued next year. Reports of both these programs have been written up in this magazine.

Seven girls have received aid from the State Student Nurses' Loan Fund during the past two years. One of them has graduated and has begun to repay her obligation.

Four more girls were selected at the pre-convention meeting of the Student Nurses' Loan Fund Committee and will begin receiving their aid upon their entrance into Nursing School in the Fall. Generous response from the membership of the Auxiliaries has made it possible to help, through the loan, these eleven girls. Special mention this year goes to Yavapai County for a $69.00 gift to the Fund. Pinal County members voted to include their Loan Fund contribution in their dues for the next five years.

The Legislation committee was most active this year in disseminating information to the members at county meetings, in the NEWSLETTER and ARIZONA MEDICINE, by publish-

ing a pamphlet "How and Why to Write our Congressman" and by writing a humourous skit "The Life of the Party" to instruct members as to how a bill is passed. It also initiated a card index showing member's name, legislative district, name of her respective U. S. and State senators and representatives.

The Publicity chairman has seen to it that twelve articles for ARIZONA MEDICINE were written by Auxiliary members and has secured good newspaper coverage for all special events.

Civil Defense has been brought to the notice of the membership through distribution of pamphlets, reports of meetings of the State Civil Defense group and by articles urging members to assist this program in every way possible.

Doctor's wives are found working in every volunteer service group throughout the State and giving financial aid also through their local county auxiliaries. The State Auxiliary gave $50.00 to the American Medical Educational Fund and is proud that we are one of the States that met this recommendation from National.

The Historian has initiated the formation of an historical file to be kept at the central State office. This file contains data pertinent to the origin and growth of the organization. A scrap book contains all publicity material.

Mrs. Enfield, 1st Vice President, took the chair while Mrs. Rudolph gave her President's report. This fine report will be printed in the next issue of Arizona Medicine. It gives the key to the success that the Auxiliary has enjoyed this year under Mrs. Rudolph's stimulating leadership.

The second general Session of the Convention was called to order at 10:00 A.M. on Friday, May 2, by Mrs. Rudolph in the Lounge at the Westward Ho. Greetings were given by Maricopa's President, Mrs. A. E. Cruthirds. The guest of Honor, Mrs. Harold F. Wahlquist, National Auxiliary President, was introduced and said a few words of gracious greeting Mrs. James R. Moore conducted a simple but impressive Memoriam service for Mrs. C. R. K. Swetnam of Yavapai, Mrs. R. J. Cron of Gila, Mrs. James Barger of Maricopa, who have passed on during this year.

The President of each County Auxiliary read her year's report, the results of which have been shown in the reports of the State Officers. However, these reports were most interesting and worthwhile and each county is to be commended upon their splendid achievement.

Mrs. Wahlquist installed the following State Officers who had been elected at the first Session:—Mrs. William F. Schoffman, President; Mrs. George S. Enfield, President-elect; Mrs. Brick P. Storts, 1st Vice President; Mrs. Hugh C. Thompson, 2nd Vice President; Mrs. Louis Hirsch, Recording Secretary; Mrs. R. Lee Foster, Treasurer; Directors—Mrs. J. H. Allen, and Mrs. R. W. Rudolph for one year; Mrs. T. C. Harper, for two years. The new President then took the chair and gave her inaugural address. which will also be printed in a future edition of this magazine. After the reading of the minutes by the Secretary and their approval, Mrs. Schoffman declared the Session adjourned.

Eighty-six members sat down to luncheon in the Corinthian Room of the Adams Hotel honoring the National President and listened to an enthusiastic and inspiring address by Mrs. Wahlquist. Mrs. George A. Williamson presided and introduced the other honor guests at the head table. They were Dr. Harry T. Southworth, immediate past President of Arizona State Association, Dr. Thomas H. Bate, President of Arizona Medical Association, Dr. Frank J. Milloy, Secretary, Dr. Jesse D. Hamer, Delegate to the AMA, Dr. A. I. Podolsky, Chairman of the Council.

An Art Exhibit of pictures painted by Arizona Doctors was held for the first time this year and enjoyed by everyone. Mrs. Howell S. Randolph of Phoenix and her committee gathered and hung the pictures.

The Convention closed, as far as the women were concerned, with a gala evening with their husbands at a cocktail hour and dinner-dance as guests of the Arizona Medical Association. A good time was had by all and we parted to go our separate ways until Fall when we meet again in our small groups to plan and work toward another State Convention.

Respectfully submitted
Mrs. George Enfield



## Changes In the Membership and Fellowship Structure of A. M. A.

1918 to 1949 Prior to 1950, and since the year 1918, all physicians who were active members of their State Society were non-dues paying members of the American Medical Association.

Of the 144,211 members of the A.M.A. in June, 1949, 77,723 were listed as fellows. Fellows paid dues to the A.M.A. and received THE JOURNAL A.M.A.

1949 The House of Delegates of the A.M.A. assessed all members of the AM.A. $25.00, but this assessment was voluntary and not compulsory. This was the only *assessment* made.

1950 There was no assessment in 1950. The A.M.A., for the first time, set the dues for membership in the A.M.A. at $25.00 a year If these dues were not paid by the end of the year the member was dropped for non-payment; before he could be reinstated, it was necessary for him to pay the delinquent year's dues.
The 1950 dues did not include a subscription to THE JOURNAL A.M.A.
A member in 1950 again had to pay fellowship dues to receive THE JOURNAL A.M.A., or could subscribe to it separately.

1951 The membership dues in the A.M.A. in 1951 were $25.00 and included a subscription to THE JOURNAL A.M.A. Fellowship dues were reduced but no longer included a subscription to THE JOURNAL A.M.A.

1952 The same as 1951, except that there are no fellowship dues and fellowship cards are not being issued. Fellowship will probably be abolished after the Annual Meeting of the A.M.A. in June, 1952.

The following summary will further clarify the changes from 1949 to 1952:

| | *Membership In the American Medical Assn.* | *Fellowship In the American Medical Assn.* | *Subscription Price Of The Journal A.M.A.* |
|---|---|---|---|
| Year | Membership dues in the A.M.A. never included Fellowship dues. Membership dues have been payable only thru the County and State Societies. | Fellowship in the A.M.A. was dependent upon membership in the State and County Societies and the A.M.A. Fellowship dues were payable to the A.M.A. and were in addition to the membership dues. | Since January 1, 1951, the price of THE JOURNAL has been included in membership dues; rates below for 1951 and 1952 are for non-members, and laymen. Anyone may subscribe to THE JOURNAL. |
| 1949 | Assessed $25.00 but payment *not compulsory* | Dues of $12.00 *included* THE JOURNAL A.M.A. | $12.00 |
| 1950 | Dues of $25.00 *did not* include The Journal. | Dues of $12.00 *included* THE THE JOURNAL. | $12.00 |
| 1951 | Dues of $25.00 *included* THE JOURNAL. | Dues of $5.00 *did not* include THE JOURNAL. | $15.00 |
| 1952 | Dues of $25.00 *included* THE JOURNAL. | No fellowship dues for 1952. | $15.00 |

## MEDICAL DEFENSE COMMITTEE
### 1951-52 Annual Report

Since the Annual Meeting of 1951, $1750 has been expended on two cases of alleged malpractice filed against Society members.

Nine (9) cases in various stages of litigation, previously filed, continue of record, one having been disposed of during the year through trial by jury, the verdict in favor of the defendant physician. During this same period, to-date only one (1) application for medical defense has been received from the membership and placed on file with Committee approval.

The Treasurer of this Association will, of course, submit a detailed report on the financial status of the Medical Defense Fund. Latest information available reveals that this fund presently approximates $38,579.79 of which slightly less than $36,000 is in government bonds, the balance in cash in bank depository.

Clarification of the intent of the action of the House of Delegates in 1950 relating to "approval" by this Committee of all applications filed for medical defense by qualified member physicians was sought. Cases have been routinely approved in the past without judgment as to which should or should not be "deemed necessary" for defense, the Committee lacking investigatory facilities and being of the opinion that they are not in a position to properly judge. Subsequently, Council directed that the Grievance Committee act as a "Board of Review" of cases coming before this Committee, and recommend which ones should be given legal support, to be financed out of the Medical Defense Fund. The Grievance Committee determined that it should not be called upon to make such determination which, in effect, would be prejudging its merits. It is felt by that Committee that each (qualified association) member, having contributed to the support of the Fund through allocation of a portion of his or her annual dues appropriated therefor, is entitled to legal assistance whenever requested. It directed that Council be informed of its views, with the hope that following further review of the subject by its members, it will in its wisdom see fit to direct the Medical Defense Committee to accept all cases for legal defense when requested, regardless of merit. Council at a meeting held January 13, 1952, direct that this report be not accepted and referred to its proper (Medical Defense) committee. Unless other action is taken by the House of Delegates, the Medical Defense Committee will, of necessity, approve all cases which apply for aid.

The Medical Defense Committee again recommends:

1. That one dollar yearly deduction per member for medical defense be continued.

2. That the Medical Defense Fund (Reserve Fund) be for medical defense solely, the purpose for which it was originally intended.

The Medical Defense Committee wishes to bring to the attention of the members of the Association that suits are increasing in number and that they are for much higher amounts than in past years; and that some Insurance Companies are canceling policies held by physicians or refusing to issue such policies. It is also the feeling of the committee that careless or thoughtless talk or conversation by member physicians has in some instances been a large factor in bringing about the increasing difficulties above detailed.

Respectfully submitted,

Otto E. Utzinger, M. D., Chairman

## HILL-BURTON GRANTS STATE OF ARIZONA

The American Medical Association, Washington Office advises that the Division of Hospital Facilities, FSA, reports that as of March 31, 1952, no new projects has been approved for Hill-Burton grants in the State of Arizona.

Status of all Hill-Burton hospital construction in this state is an follows:

*Completed and in Operation*: 7 projects at a total cost of $3,340,593, including federal contribution of $1,132,562 and supplying 246 additional beds.

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*Hegsted, D. M.; Mann, G. V., and Stare, F. J.: Comments on Cholesterol, Editorial, Postgrad. Med. *11*:454 (May) 1952.

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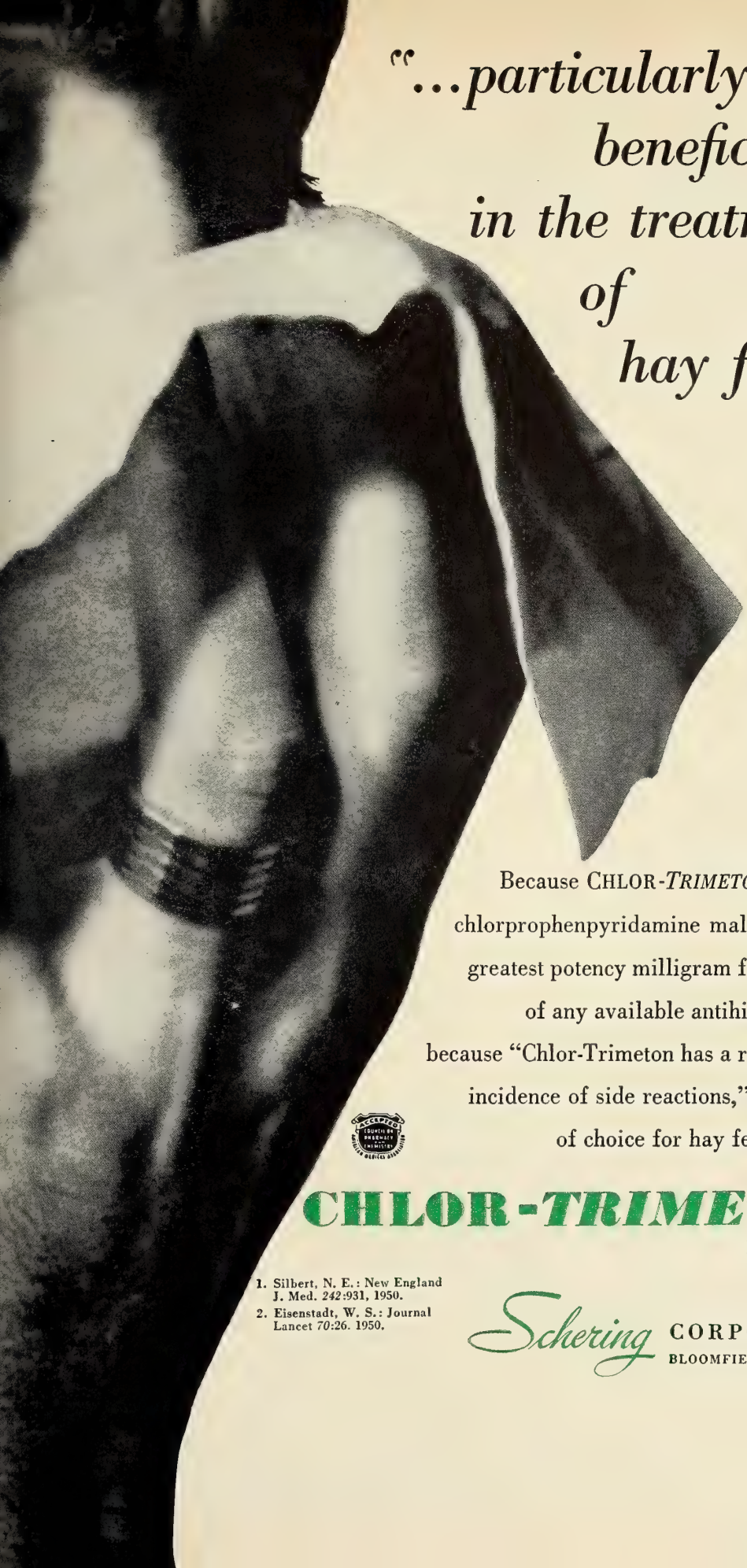
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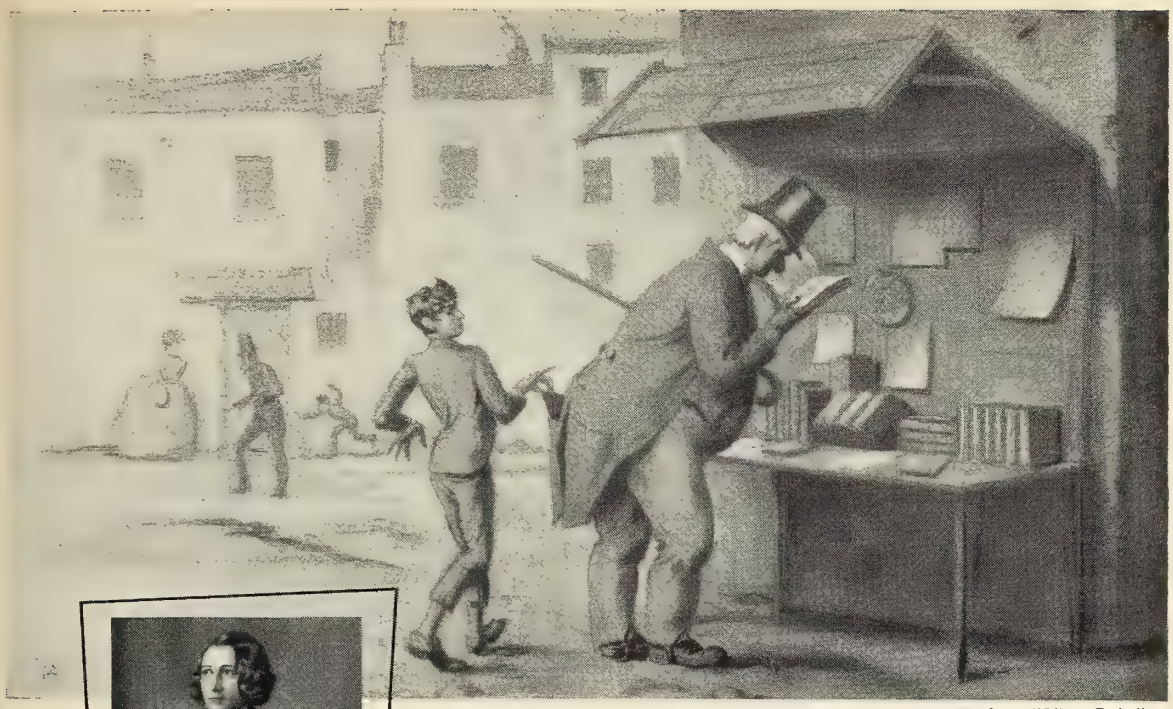
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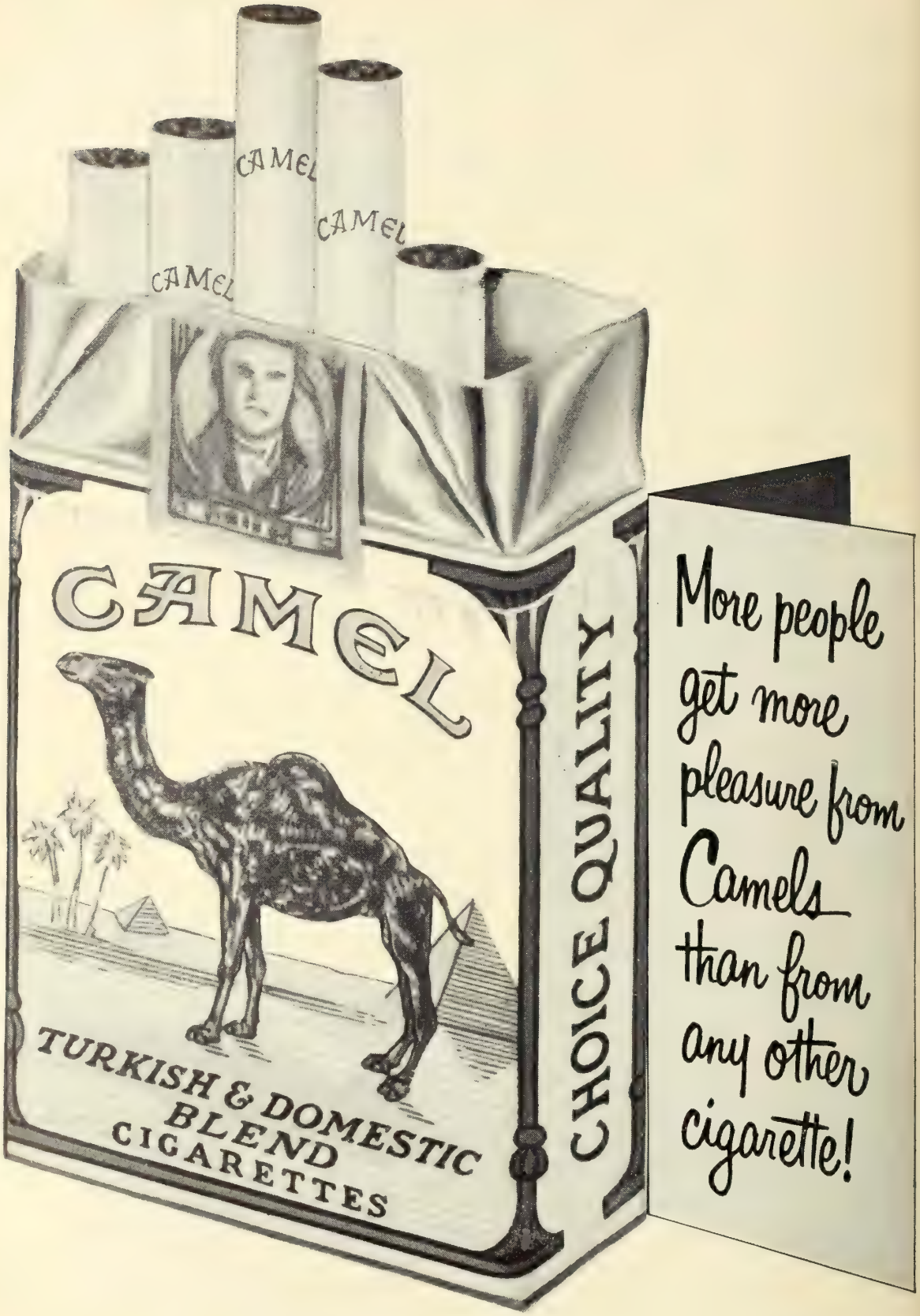
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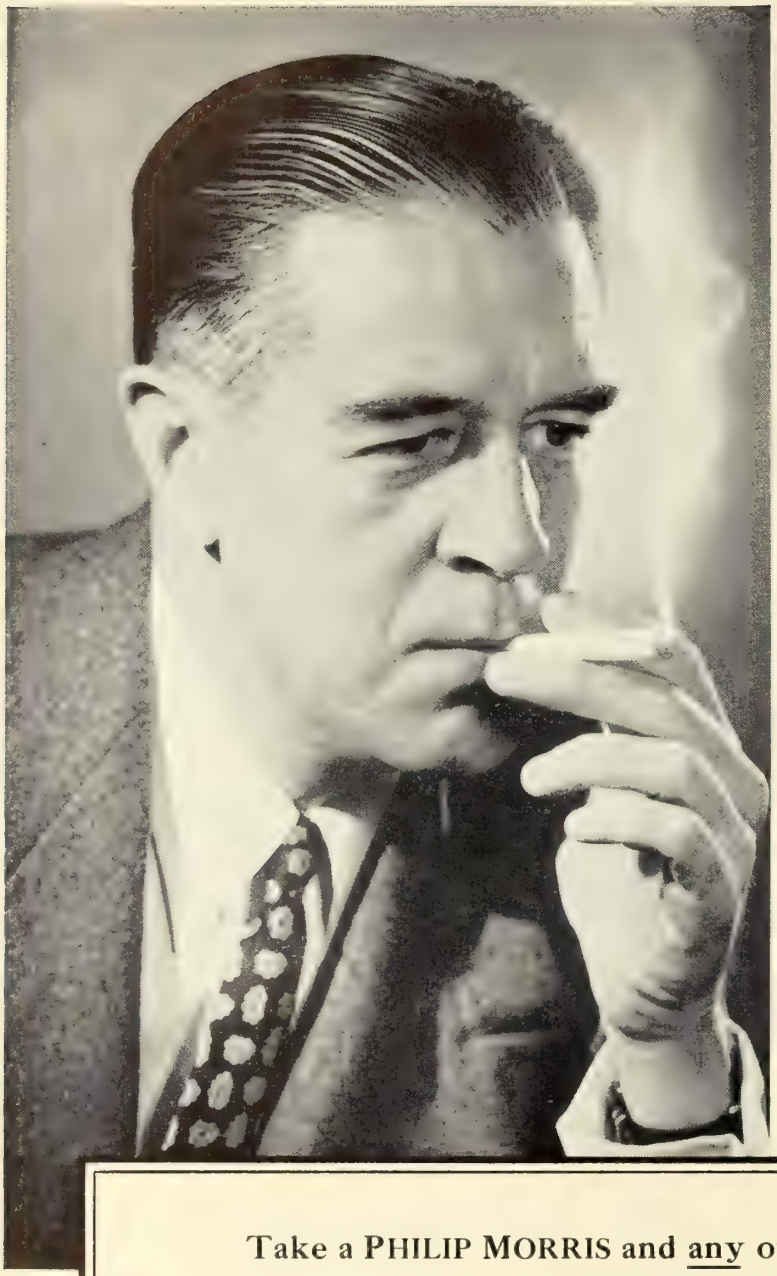
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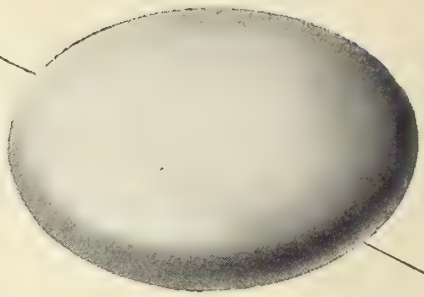
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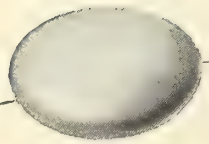
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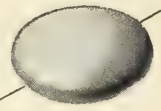
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**1.** *Perloff, Wm. H. (1951), Treatment of the Menopause. II. American J. Obst. & Gynec., 61:670, March.* **2.** *Reich, W. J., et al. (1951), A Recent Advance in Estrogen Therapy. I. American J. Obst. & Gynec., 62-427, August.*

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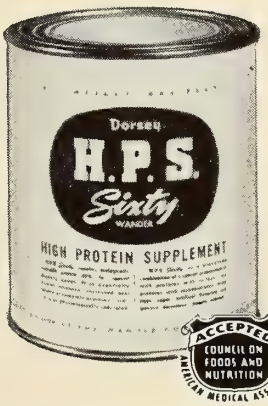
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ARIZONA MEDICINE
Journal of Arizona Medical Association

VOL. 9, NO. 7 JULY, 1952

# Original ARTICLES

## ADENOMA OF THE ISLETS OF LANGERHANS: A CASE REPORT

Michael C. Govostis, M. D., Orville F. Bonnett, Jr., M. D.
and John Van Prohaska, M. D.
Chicago, Illinois

It is worthy of note that since 1927, when Wilder first reported an islet cell tumor of the pancreas, there have been approximately 300 cases (1, 3, 4, 6, 7) recorded in the literature. Microscopically many of these tumors do not fall into classifications of benign or malignant, but are reported by various pathologists as questionably malignant. This is of paramount importance to the surgeon. In some cases a malignant tumor situated in the pancreas requires the radical operative procedure of pancreaticoduodenectomy, providing of course, that it has not already metastasized. The magnitude of this procedure prevents its execution for a benign adenoma.

Some of the tumors reported as questionably malignant have pursued the post-operative course of a benign neoplasm (2, 5, 8). The impression gained from a survey of the literature is that the criteria for malignancy has not been clearly defined in this type of tumor. Our own case adds another instance of an islet cell tumor which microscopically presented evidence of invasion, but grossly appeared benign and subsequently has behaved as such.

E. P., a 38-year-old housewife, of German birth, was admitted to the Chicago Memorial Hospital on August 1, 1948, in a semi-comatose condition. The initial history was given by her husband.

For the previous nine months the patient had been experiencing periods of unconsciousness lasting from two to twelve hours, at intervals of three to four weeks. Prior to this time she had been perfectly well. Thirty hours before admission she began to perspire freely, complained of being hungry, and shortly thereafter lapsed into coma. This was accompanied at the outset by a generalized convulsion, foaming at the mouth, and urinary incontinence.

Further inquiry revealed that the patient had not gained or lost weight recently. Her appetite had been good and bowel habits normal. There was no history of subjective gastrointestinal disturbance. The cardiovascular, respiratory, and genito-urinary systemic inquiries were essentially negative.

She had had the usual childhood illnesses, but had never been seriously ill or had previous surgery. The menstrual history was normal. Her habits were normal and she denied the use of drugs, alcohol, and tobacco. She had two children, both of whom were well. The family history was negative except for an instance of schizophrenia in a maternal aunt.

*Physical Examination*: Revealed a semi-comatose, dehydrated, obese, white woman who moved her left arm slightly in response to painful stimuli. Her temperature was 100°F., rectally; pulse, 88 per minute; respirations, 18 per minute; and blood pressure, 120/80. The extremities were flaccid.

Examination of the head and neck revealed no abnormality. The pupils were 3 millimeters in diameter, equal, and round. They reacted normally to light. The optic discs were normal and both corneal reflexes were present. There was no muscle rigidity. The thyroid gland was normal on palpation. The breasts were large and pendulous. The heart, lungs, abdomen,

pelvis, rectum, and extremities were normal. Thorough neurological examination revealed no other abnormal findings.

A blood sugar, drawn on admission, was 10 milligrams per cent. An intravenous infusion of 1000 cubic centimeters of 5 per cent glucose in physiological saline was given and the patient rapidly became alert and cooperative. Another blood sugar at this time was 137 milligrams per cent. The Kahn and Wassermann tests of blood and spinal fluid were negative. The urinalysis revealed four-plus acetone. The blood count was: Erythrocytes, 4,700,000; hemoglobin, 86 per cent; white blood cells, 6,150; and normal differential count. The spinal fluid had the normal number of cells, a total protein of 26 milligrams per cent, a negative Pandy test, a colloidal gold curve of 0000000000, and a sugar level of 8 milligrams per cent (taken when patient was in hypoglycemic shock).

The next day the patient was fasted in preparation for an upper gastrointestinal roentgenologic study. She became comatose and the blood sugar at this time was 40 milligrams per cent. She immediately responded to 20 cubic centimeters of 50 per cent glucose given intravenously. Glucose tolerance tests were done pre-operatively and post-operatively, and are shown in graphic form in Fig. 1.

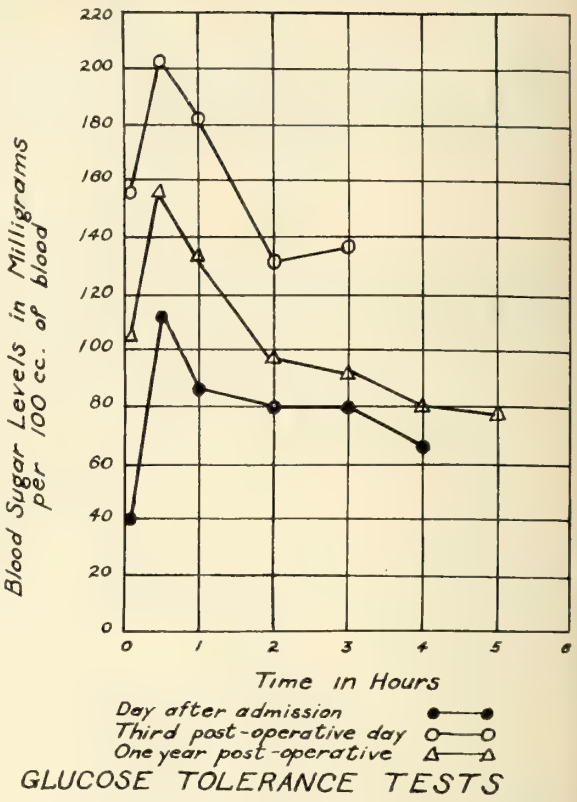



**Fig. 1. Graph showing pre-operative and post-operative Glucose Tolerance Curves.**

Fluoroscopic barium studies revealed no abnormality in the esophagus, stomach, or duodenum. The duodenal curve was within normal limits. A roentgenogram of the chest was normal.

On the sixth hospital day (an early morning blood sugar was 48 milligrams per cent) the patient was taken to the operating room and the abdomen opened through an upper right paramedian incision. The liver, spleen, gall bladder, stomach, bowel, and pelvic organs were normal. Upon further examination a tumor was found in the head of the pancreas lateral to the second portion of the duodenum. The gastrocolic omentum was then opened and the body and tail of the pancreas explored. No other tumors were found. The opening in the gastrocolic ligament was closed. The lateral peritoneum of the duodenum was incised and the duodenum reflected medially. The tumor lay near the surface of the pancreas and measured approximately 1.5 centimeters in each of its three dimensions.

By blunt and sharp dissection the tumor was extirpated. The dissection in the pancreas was done between clamps and all points ligated with silk. The defect in the pancreas was then closed with interrupted silk sutures and the entire area peritonealized. A penrose type drain was placed in the region of the head of the pancreas and brought out through the abdominal wound. The abdomen was closed by layers. The operative procedure was uneventful and the patient received 1000 cubic centimeters of 5 per cent glucose in water and 500 cubic centimeters of whole blood while in the operating room.

During surgery a frozen section of the tumor was made, proving it to be an islet cell adenoma. Photomicrographs of the fixed speciment, under low and high power, are shown in Figures 2 and 3. The pathologist's final report was as follows:

"Adenoma of the Island of Langerhans, with hyalinization.

"Note: The tumor is invasive but shows no evidence of anaplasia.

"*Gross Description*: The speciment consisted of a portion of previously fixed tissue, averaging 1 x 1 x 1 centimeters. Cut section revealed a

lobulated grey-tan granular surface. Small yellow punctate areas were visible throughout the cut section.

"*Microscopic Description*: Sections through the tumor reveal round and oval cells with uniform hyperchromatic nuclei, the latter containing punctate chromatin and having lightly neutrophilic homogenous cytoplasm. The cells radiate from fibrous connective tissue with hyalinized strands in which sclerosed blood vessels are apparent. Mallory's ozan stain reveals the stroma to be densely blue. The cells have finely granular neutrophilic or purple-grey cytoplasm. An occasional cell has apparently basophilic cytoplasm. These cells in one focus extend from the capsule and copress surrounding tissue."

Six hours after the operation the patient's blood sugar was 132 milligrams per cent. On the third post-operative day the patient complained of severe epigastric pain. A serum amylase was found to be 381 units. The drain was removed on the fourth post-operative day. Immediately there was a profuse sanguino-purulent discharge from the drain site. A culture showed the infecting organisms to be Escherichia coli and aerobacter aerogens. The infection was readily controlled by penicillin and streptomycin therapy and the drainage became clear in a few days. It then became evident that the patient had a pancreatic fistula. The discharging fluid was analyzed for pancreatic enzymes and was found to contain 8,160 units of amylase and 1.560 units of lipase per hundred cubic centimeters. A catheter was inserted into the fistulous opening and continuous suction applied.

Further progress was uneventful. The patient was discharged on the twenty-first post-operative day. At this time there was only a slight drainage from the pancreatic fistula. When the patient returned home and resumed a more liberal diet she reported that the drainage increased in volume. This was noted particularly post-prandially and lasted from one to two hours. She was placed on a milk diet and we noted that the fistula drained very little. Two months from the time of surgery it had healed.

Following surgery a specimen of urine was collected every four hours for the first four days and every six hours thereafter. Qualitative examination of these specimens revealed 1-plus to 3-plus reduction for glucose and on occasions

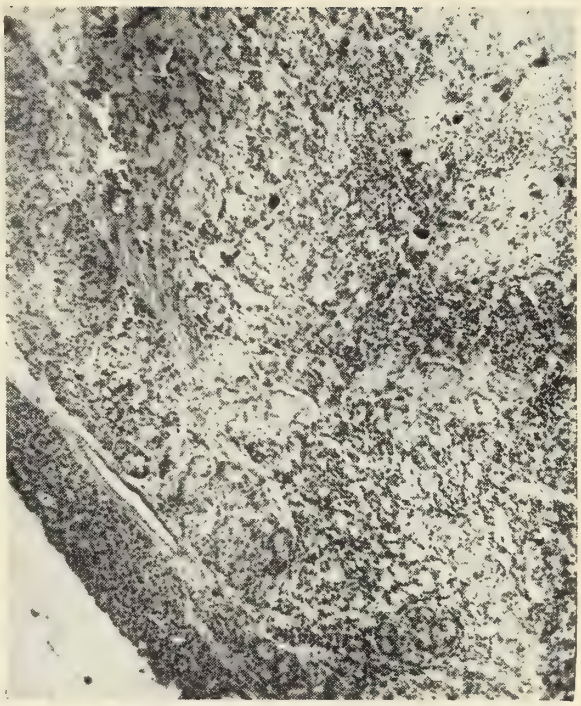


Fig. 2 Adenoma of the Islets of Langerhans. Note the Invasive Character of the Tumor. (Photomicrograph X100)

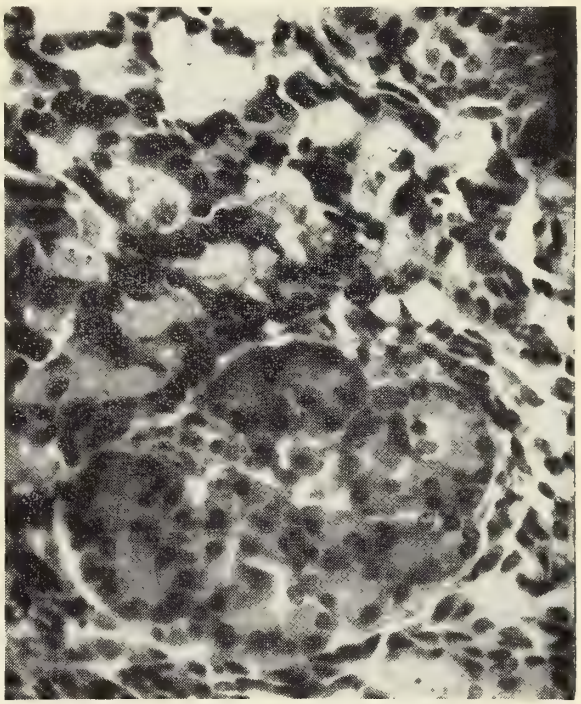


Fig. 3. Adenoma of the Islets of Langerhans. (Photomicrograph X200)

a trace of acetone. During the last week of hospitalization neither acetone nor sugar were found in the urine. At no time did the patient receive insulin.

Three months after discharge the urine was found negative for reducing substances. The fasting blood sugar was 160 milligrams per cent.

A glucose tolerance test was not done at this time.

On August 1, 1949, one year after the previous admission, the patient was re-admitted to the hospital. At this time she complained of attacks of dizziness and weakness, of two weeks' duration. These attacks were entirely unrelated to food intake nor were they precipitated by fasting. She was confused, anxious, and stated that she was worried and "had terrible ideas in her mind." At this time physical and laboratory examinations were normal.

These examinations indicated, beyond any doubt, that there was no evidence of recurrence of hyperinsulinism. The patient was discharged from the hospital with the diagnosis of psychosis.

## COMMENT

In reviewing the literature it became evident that the criteria for malignancy in the islet cell tumor must be re-evaluated. Many cases are ported as questionably malignant and subsequently prove to be benign. Ours was such a case.

The psychosis which developed in this patient is interesting. One other report of a similar complication was made by Sandbloom(9). He reported a case of proved islet cell adenoma in which the patient subsequently developed a dementia and epileptiform seizures. It is difficult to believe however that the psychosis developed in this patient one year after surgery was brought on by cortical damage in one of her hypoglycemic states. The pancreatic fistula was a troublesome complication. We believe that a mild continuous suction of the fistula, protection of the skin with aluminum paste, and milk diet were responsible for early healing. We observed repeatedly in this case that a milk diet reduced the secretion of pancreatic juice.

## SUMMARY

1. A proved case of islet cell adenoma is presented.

2. This presentation suggests that in some instances the histological criteria of malignancy or suspected malignancy of islet cell tumors are not firmly established.

3. A second observation of the development of psychosis following the surgical cure of hyperinsulinism is noted.

4. A substantial reduction of the flow of pancreatic juice through a fistula was noted when a normal diet was replaced by a meat-free milk diet.

### REFERENCES

1. F. N. Allan & S. F. Marshall—Surgical Treatment of Islet Tumors With Hyperinsulinism—Surg. Cl. of N. A., 25:719-725. June 1945.
2. L. C. Carpenter, Jr.—Hypoglycemia, Secondary To Insular Adenoma. With Report Of Case—Jour. Mich. Med. Soc., 45:70-72, Jan. 1946.
3. R. M. Clyne, H. M. Leeds, & J. S. Cowdry—Review Of Lit. Spontaneous Hypoglycemia Due To Islet Cell Tumors—N. Y. St. Jour. Med. 45:405-409, Feb. 15, 1945.
4. V. K. Frantz—Adenomatosis of Islet Cells With Hyperinsulinism—Ann. Surg., 119-824-844, June 1944.
5. M. Haines—Islet Cell Tumor—Jour. Path. & Bact., 58:104-107, Jan. 1946.
6. P. F. A. Hoefer, S. A. Gutman, & I. J. Sands—Convulsive States and Comas In Cases of Islet Cell Adenoma—Am. Jour. Psych. 102:486-495, Jan. 1946.
7. R. Lopez-Krueger, M. Dockerty—Tumors Of the Islets of Langerhans—S. G. & O., 85:495-511, 1927-1945.
8. J. Rabinovitch & S. Achs—Adenoma Of the Islets of Langerhans—Arch. Path., 40:74-77, July 1945.
9. P. Sandblom—Spontaneous Hypoglycemia: Report of Seven Cases—Act. Med. Scand., Supp. 196:45-62.

# PERIODIC PARALYSIS ASSOCIATED WITH EXOPHTHALMIC GOITER

Howard D. Cogswell, M. D. and Lindsay E. Beaton, M. D.
Tucson, Arizona

Periodic paralysis is a rare disease. It is characterized by attacks of flaccid paralysis of the somatic musculature below the neck, occurring at irregular intervals, loss of electrical and mechanical excitability with loss of the deep tendon reflexes of the involved muscles, and absence of sensory or psychic disturbances. In the intervals between attacks the patient may experience weakness or stiffness in the muscles but otherwise apparently is in normal health. Muscles innervated by the cranial nerves are seldom affected and sphincteric control is preserved. The episodes of paralysis are more prone to appear after prolonged periods of rest or during sleep and are noted frequently on waking in the morning. The attacks may be precipitated by a high carbohydrate meal,(1), exposure to cold(2), or emotional upsets. As in all chronic paroxysmal diseases, it is difficult to evaluate the significance of these precipitating factors. The paralysis usually starts in the periphery of the limbs, the legs most commonly, and advances proximally; the length of its persistance varies from a few hours to several days followed by recession of the paralysis in a reverse order to that in which it came on. The heart may show dilation of the left ventricle, a transient murmur in the mitral area, tachy-

Presented before the American Goiter Association, May 24, 1951, at Columbus, Ohio.

cardia(3), and changes in the electrocardiogram (4), during an attack.

It would seem, from reviewing the literature, that there are at least two types of periodic paralysis. The first and more common is the familial periodic paralysis which occurs as a familial inherited trait behaving as a Mendelian dominant from generation to generation with varied manifestations. Its usual onset is in the first or second decade of life occurring in males three times as commonly as in females. The second and rarer type is the periodic paralysis associated with exophthalmic goiter. This is sporadically seen occurring almost entirely in young adult males.

Most authors reporting on this subject include the two types as one or the same entity. It is quite probable that a common factor is present in both types to produce the paralysis. Since, however, there are definite physical and pathological findings with curative therapy available for the paralysis associated with hyperthyroidism and none of these that are constant in the familial type, it would seem apparent that there are in reality two diseases producing periodic paralysis as a pathognomonic sign.

The following illustrates the typical symptoms with a cure affected by a sub-total thyroidectomy in an individual affected by hyperthyroidism associated with periodic paralysis:

*Report of Case*: G. E., a Mexican male musician, aged 36 years, entered the hospital on March 31, 1947. Until 1941 this patient had enjoyed normal health. During the mid-portion of that year he experienced attacks of 'paralysis' on several occasions, at which time he had been unable to move his lower extremities. These attacks had lasted several hours, gradually subsiding, and the only residual the following day was generalized muscle weakness. The attacks subsided completely in the next few months and did not make their reappearance until two months before admission to the hospital. He was first seen by a physician in January, 1947, complaining of paralysis in the legs and shoulder girdles. This had its onset after the patient had eaten a heavy meal and the paralysis persisted about four hours. During the previous four months he had lost thirty pounds in weight and experienced episodes of epigastric pain associated with abdomnal distention, sweating, nervousness and itching of the skin. Physical examination the next morning revealed the following positive findings: blood pressure 110/80; pulse 110; moderate exophthalmus; marked tremor of the hands and fingers; an enlarged symmetrical thyroid gland; absent deep reflexes; spasticity of the ankles and marked weakness of all extremities. A rectal examination was attempted, but, due to the extreme sensitivity of the patient, this was not possible. X-rays of the gastro-intestinal tract and chest were normal. The basal metabolic rate was plus 94 per cent.

The patient was started on propylthiouracil, 50 mg., three times a day; iron; phenobarbital, and vitamin B complex with gradual improvement. During the pre-hospital period he experienced several episodes of weakness of the shoulder girdles and lower extremities but no definite paralysis. He had gained 29 pounds before his entrance to the hospital. Physical examination at the time of his hospital admission showed the following changes from the examination two months previously: blood pressure 126/80; pulse 80. The exophthalmus had lessened; the tremor of the hands was absent; deep reflexes were diminished but present; the ankle spasticity had disappeared; rectal examination was possible and the sphincter action was normal. The basic metabolic rate was minus 13 per cent. The complete blood count was normal as was the urinalysis. The serology was negative.

A subtotal thyroidectomy was performed on April 2, 1947. His convalescence was uneventful and he left the hospital on April 9, 1947, on the seventh postoperative day. He was last seen in December, 1951. At this time he stated that he was well. He had gained 40 pounds since his operation, had experienced no further attacks of weakness or paralysis, and was working as a musician nightly.

Very little is known regarding the etiology of this disease and no constant pathological findings have been present on the few postmortem examinations that have been made. It has been found that low levels of serum potassium existed during an attack of both types of periodic paralysis (hyperthyroidism or familial, (5). In some instances the attacks could be lessened or terminated by the administration of potassium salts. McQuarrie(6) and others found that lowering the blood potassium by various methods induced attacks in some susceptible individuals. Attacks induced by epinephrine, intravenous glucose, or desoxycorticosterone definitely estab-

lished the fact that the concentration of serum potassium falls sharply during such attacks. A disturbance of the potassium metabolism is apparently not the basic cause of the condition per se, however. Very low values for serum potassium are found in other diseases in which the distinctive phenomena of periodic paralysis are not present.

Shinoski(1) believed that periodic paralysis is a polyglandular disease. He observed 24 cases of periodic paralysis, seven of which were associated with exophthalmic goiter. He noted a definite increase in the frequency and severity of the attacks of paralysis following the administration of thyroid extract in 6 of the 7 cases of hyperthyroidism. It seems improbable that all cases of periodic paralysis are due to a polyglandular disease as many have shown no glandular dysfunction whatever.

Autointoxication has been suggested by many investigators(7). Examinations of body secretions, excretions, and metabolism have been made, always with the object of finding the evasive toxin. No convincing supporting evidence has been discovered. Findings which are fairly constant during a paralytic episode are: an increase of oxygen consumption(8), elevation of the lactic acid concentration in the blood(9), a lowering of the blood phosphorus(6), and a low serum potassium(5).

The oxygen consumption of pieces of excised muscle taken from a patient with familial periodic paralysis was compared to the oxygen consumption of muscle taken from a normal person(10). Whereas the muscle from the patient consumed 5.3 cu. mm. of oxygen per gram per minute, the specimen from the normal subject consumed 9.1 cu. mm. respectively. The same pieces of muscle were analyzed for total inorganic and organic acid soluble phosphorus, phosphocreatine, and creatine. The content of these substances was found to be considerably lower in the patient's muscle than that of the control, except that the phosphocreatine was slightly increased. These observations are significant but await confirmation.

Periodic paralysis associated with hyperthyroidism is cured by inhibiting the function of the thyroid gland. Seed(11) controlled the symptoms in a patient by the administration of 6-propylthiouricil; complete relief resulted following roentgen therapy to the thyroid gland and administration of iodine in a case observed by Dunlap and Kepler(12), and a number of cures have been reported following subtotal thyroidectomy(3),(12), and (13). In some instances a recurrence of the hyperthyroidism has been accompanied by episodes of periodic paralysis. It is known that patients affected by exophthalmis goiter frequently display muscle weakness, quadriceps weakness being one of the disease's diagnostic findings. Weakness in the bulbar group of muscles, manifesting difficulty in deglutation and phonation, ocular palsy or ptosis may all be associated with exophthalmic goiter. There is a type of myasthenia gravis which is sometimes associated with thyrotoxicosis(14). It seems apparent that there is some physiologic or chemical change, at present not understood, which occurs in muscle tissue in cases of exophthalmic goiter which is responsible for the production of the various myopathies.

Many writers have claimed an antagonism between the thyroid and thymus glands. The fact that the thymus is usually persistent in patients with exophthalmic goiter has been advanced in support of such a hypothesis(15). One of Shinoski's patients suffering from periodic paralysis associated with hyperthyroidism died, and the autopsy showed no anatomical changes except in the thyroid and thymus glands, which were both enlarged. It is interesting to speculate on the possible relationship between the thymus gland and thyrotoxicosis associated with periodic paralysis. The relief of muscle weakness and paralysis following the removal of a thymus gland in myasthenia gravis is akin to the recovery following thyroidectomy for exophthalmic goiter with paralysis. Many of the findings differ in the two diseases. Prostimine, a valuable aid in myasthenia gravis, had no beneficial effect when administered to a patient in an attack of periodic paralysis(11), yet the fact that the thymus is related to muscle weakness and paralysis and is usually present in exophthalmic goiter is a factor which should bear more investigation in establishing the etiology of this interesting and rare disease.

**BIBLIGRAPHY**

1. Shinosaki, T., Ztschr, T. D., Qes. Neurol. Psychiat. 100: 564, 1926.
2. Schoenthal, L., Amer. Journ. Dis. of Child., 48:799, 1934.
3. Hildebrand, A. G., and Kepler, E. J., Journ. Nerv. and Mental Dis., 94:713, No. 6, 1941.
4. Stewart, H. J., Smith, J. J., and Milhorat, A. T., Am. J. Med. Sci., 199:789, 1940.
5. Biemond, A., and Daniels, A. P., Brain, 57:91, 1934.
6. McQuarrie, I., Annual Clinical Conf. Chicago Med. Society, March, 1947.
7. Morrison, S., and Levy, M., Archives of Neur. and Psychiat., 28:386, 1932.
8. Edsall, D. L., and Means, J. H., Am. J. Med. Sci., 150:169, 1915.
9. Kirk, E., and Moller, E., Acta. Med. Scand., 80:64, 1933.

10. Victor and Wolf (Quoted from Schoenthal).
11. Seed, L., West. Journ. of Surg., Obst. and Gyn., 55:640, Dec. 1947.
12. Dunlap, H. F., and Kepler, E. J., Endocrinology, 15:541, 1931.
13. Mora, J. M., Endocrinology, 16:407, 1932.
14. Brain, R. W., Quart. J. Med. 7, 293:1938.
15. Means, J. H., The Thyroid and Its Diseases, 2nd Edition Pg. 104, J. B. Lippincott Co., Philadelphia, Pennsylvania.

# SUDDEN DEATHS IN INFANTS

(With Reports of 4 Cases)

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Four cases of sudden death in infants in which epidemiological, pathological and laboratory studies were done are reported below.

In two of the cases the infants were found dead and the circumstances surrounding death suggested acidental mechanical suffocation. Had careful postmortem studies not been done, the deaths would undoubtedly have been so recorded. In the other two cases the infants were not found dead but had such rapid, fulminating illnesses as to die within a few hours after suddenly developing serious symptoms in the course of a mild "cold."

Vital statistics of the United States each year include over a thousand deaths in infants under one year of age as due to "accidental mechanical suffocation," In 1948, for example, there were 1,568 infant deaths so classified - a minimal figure, since in that year there were 5,315 deaths in infants under one year ascribed to "asphyxia, cause not specified" and several hundred deaths ascribed to "status thymicolymphaticus."

Farber(1), Abramson(2), Werne and Garrow(3,4) and others have shown that the certifications of "accidental mechanical suffocation," "status thymicolymphaticus"*** or "aspiration of stomach contents" in infants found dead or dying unexpectedly are erroneous. The serious implications inherent in the conclusion that an infant has died of a preventable accident make it imperative that careful and complete postmortem studies be done in every such case. In most of these cases the presence of a fulminating disease process will then be demonstrated and the parents of the infant spared the lifetime burden of guilt which all too frequently is imposed on them.

The cases here reported are illustrative of the problem.

## CASE 1

A white male infant, 4 months of age, was found dead by his mother in the bed in which they both had slept. The child had been well the night before save for a "cold." The mother was distraught by the fear that during the night she had rolled over on the child and so smothered it. The diagnosis of accidental mechanical suffocation was entertained and would have been held had not a complete autopsy been performed and epidemiological follow-up done.

AUTOPSY REPORT: As is usual in these cases, there were no gross findings to account for death. Microsopic findings, however, were significant and revealing as described below.

BRONCHIAL TREE: The bronchial passages show swelling of the epithelium with degenerative change and desquamation into the lumen.

LUNGS: The pleura shows edema and separation of the collagenous and reticulum fibers. Interlobular septae of the lungs are edematous and the vessels congested. Alveolar spaces contain pink-staining, hyaline-like masses and a moderate number of mononuclear cells. The alveolar walls are thickened due to edema and infiltration with polymorphs, lymphocytes and plasma cells.

HEART: The epicardial surface is edematous and the vessels congested. Petechial hemorrhages are numerous in the epicardium.

KIDNEYS: The kidneys show marked congestion throughout the cortex and the medulla. The tubular epithelium presents varying degrees of cloudy swelling.

LIVER: Many of the hepatic cells present a marked degree of swelling. The sinusoids are compressed as a result of the swelling of the hepatic cells.

ARDENALS: There is increased fat content of the cortical cells with disintegration of many. Cells of the medulla also show degeneration and disintegration. Blood vessels in the cortex and medulla are congested.

SMALL INTESTINE: The ileum shows marked hyperplasia of lymphoid elements with edema and vascular congestion. There is diffuse infiltration of the intestinal wall with polymorphs,

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***Status lymphaticus is no longer regarded as an explanation of sudden death. It is now recognized that infants and children who die suddenly from any cause exhibit a relative enlargement of the thymus and other lymphoid structures, which is merely an expression of good nutrition. Holt and McIntosh(5).

lymphocytes and eosinophiles. The submucosa, muscularis and serosa are edamatous and the blood vessels congested.

ANATOMICAL DIAGNOSIS:

Pneumonitis, acute.
Enteritis, acute.
Congestion of liver, spleen and gastro-intestinal tract.
Petechial hemorrhages of the epicardium.

It is apparent that this infant died from an overwhelming infectious process and not from mechanical suffocation as had first been supposed. Epidemiological follow-up revealed that the child had been discharged from a hospital about three weeks previously, where he had been treated with penicillin for bronchopneumonia. After discharge the child was apparently well save for the persistence of a chronic "cold" with nasal catarrh and a productive cough.

Bacteriological study of secretions from the bronchial tree revealed a beta-hemolytic *Escherichia coli.* (See discussion.)

Sections of lung were obtained under sterile precautions, frozen and shipped to the Virus and Rickettsial Laboratories of the Communicable Disease Center, Montgomery, Alabama for isolation of a virus. This material, inoculated into three-weeks-old mice, yielded no virus.

CASE 2

A white infant, 2 months of age, was found dead in his crib by the mother on awakening in the morning. The child apparently had been perfectly well when put to bed the night before and it was assumed that he had smothered in the bedclothes during the night. To the parents' grief were added their feelings of guilt that they had allowed their child to sufficate. What would have been ascribed as a death due to accidental mechanical suffocation was correctly diagnosed because an autopsy was requested and careful pathological study was done.

AUTOPSY REPORT: No evidence of asphyxia due to mechanical suffocation was found. The lungs presented an atypical pneumonitis such as is frequently associated with a virus etiology. In addition, there was edema and congestion of the brain and congestion of the liver, spleen and intestinal tract.

ANATOMICAL DIAGNOSES:

Pneumonitis, acute atypical
Edema and congestion of the brain
Congestion of liver, spleen and gastro-intestinal tract

Cultures for virological and bacteriological study were taken despite the fact that the body had been embalmed some eight hours before. These cultures (from nasopharynx, bronchial tree, lungs and liver) revealed no organism and the nature of the fulminating infection in this case must remain obscure.

The following two cases of unexpected death in infants had such rapid courses of clinical illness leading to death that under other circumstances they might have been found dead in crib or bed. Their symptoms attracted attention, though only a few hours before death. They illustrate the presence of overwhelming infections in infants previously considered to have nothing more than mild colds.

CASE 3

A 2-months-old white female infant, previously well save for a mild "cold," was seen in the emergency room early one morning because the child had vomited her morning feeding. Examination was unimpressive and a diagnosis of an upper respiratory infection was made. An injection of penicillin was given and the child was sent home. The temperature at this time was 102.8°. Later that morning the child suffered convulsions and developed severe respiratory distress. She was returned to the hospital, became comatose and died at 2:00 P.M., about six hours after she had first become ill. A white blood cell count revealed a leucocytosis of 35,000.

It was thought at first that this was death due to aspiration of vomitus but autopsy revealed the cause of death to be an overwhelming respiratory infection.

AUTOPSY REPORT: The significant findings were in the lungs and the brain. The lungs revealed a patchy pneumonitis and congestion. All of the interstitial vessels were dilated and packed with red cells. The pleura was edematous and congested. The bronchial epithelium revealed several areas of desquamation.

The brain revealed a marked degree of edema and vascular congestion. The Virchow-Robin spaces were widened and some of the neurones revealed degenerative changes.

ANATOMICAL DIAGNOSIS:

Pneumonitis, acute
Congestion and edema of the brain
Hyperplasia of the solitary lymph follicles

and Peyer's patches of the lower ileum
Congestion of ilver, spleen and gastro-intestinal trace

This autopsy was performed within an hour after the child's death and surgical aseptic technique was used throughout. Specimens of pleural fluid, lung and enteric contents were studied for both viruses and bacteria. No virus was isolated, but bacteriological cultures revealed a beta-hemolytic *E. coli* (O-group 6) from secretions of the bronchial tree and nasopharynx.

CASE 4

A white male infant, 6 months old, died suddenly after admission to hospital early in the afternoon. He had been well that morning, had been observed playing and laughing as usual. Later in the forenoon he suddenly developed respiratory difficulty which rapidly became worse. He was admitted to the hospital but died within an hour and a half thereafter. The entire course of the illness was little more than four hours. Had it occurred at night in such circumstances as to permit the allegation of smothering by bedclothes or pillow, this death would likely have been thought due to accidental mechanical suffocation.

AUTOPSY REPORT At autopsy, significant findings were present in the lungs and brain. The lungs revealed thickened alveolar walls, congested capillaries and edema. There were many areas of patchy pneumonitis in which the alveoli were filled with mononuclear histiocytes.

The brain sections revealed a marked degree of edema as evidenced by widening of the reticulum meshwork. The capillaries were widely dilated and filled with red cells. Some of the neurones showed regressive changes.

ANATOMICAL DIAGNOSIS:
Patchy pneumonitis, etiology undermined
Enteritis, acute
Edema and congestion of the brain

Death was considered due to cute pneumonitis of undetermined etiology. Inasmuch as the body had been embalmed before autopsy, no cultures were taken in this case. Epidemiological follow-up, however, revealed that the twin sister of the dead infant had been diagnosed by the family's physician as having pneumonia in the week preceding her brother's death and that the brother had had catarrhal symptoms of what the parents considered only as a mild "cold."

DISCUSSION: There are no gross anatomical findings or definite postmortem criteria to prove asphyxial death unless the means of asphyxiation or the effects of the method used (such as skin lesions in strangulation from a wire or rope) are demonstrable. Since this is true, such certification as a cause of death is never tenable unless careful and complete postmortem studies have ruled out all other possible causes.

Werne and Garrow(3) investigated 167 infants found dead in crib, carriage or bed while in apparent health. Their conclusions bear repetition.

"In no instance has our investigation proved accidental mechanical suffocation of a healthy infant by bedclothes or in analagous manner.

"Since in 26 per cent of our gross cases autopsy findings immediately excluded death by accidental mechanical suffocation, all such certifications *without autopsy* may be considered inaccurate. Furthermore, we may consider as *unsatisfactory* all autopsies in which there was failure to examine the brain, the mastoids, the middle ears and the neck organs, in addition to the routine dissection of the thoracic and abdominal viscera. We may also discard all cases that have not had a complete microscopic examination."(3)

The fact that a beta-hemolytic *E. coli* was isolated from the respiratory passages in two of the cases here reported is of interest and has possible etiological significance.(9) Neter et al., (6) have recently summarized evidence suggesting that two types of *E. coli* (not ordinarily among the type of *E. coli* composing the normal intestinal flora) may cause infantile diarrhea. An alpha, 011, and a beta, 055, type are described and from a series of four infants who did not harbor the organism preceding illness, one or the other of these two types was recovered from feces, throat and nasopharynx during the course of subsequent diarrheal disease. *E. coli* septicemia and meningitis have been reported in the literature(7, 8) and while the type isolated from the cases of sudden death in infants described above is not the same serotype, 655, as the pathogenic type studied by Neter et al., the possibility of its etiological relationshp in these cases must be considered. Both cases, it will be recalled, revealed an enteritis at autopsy.

SUMMARY: Four cases illustrative of the problem of sudden unexpected death in infants are reported. The erroneous nature of such certifications as "accidental mechanical suffocation,"

"status thymicolymphaticus" and "aspiration of stomach contents" as causes of death in these cases is emphasized. The importance of careful and complete autopsies which will in most cases reveal evidence of a fulminating infection commonly involving the respiratory tract is pointed out. The responsibility for correct certification of sudden unexpected death in infants is shared by physician, coroner and pathologist, none of whom should make or accept the diagnosis of "accidental mechanical suffocation" until a careful and complete autopsy has been done.


REFERENCES

1. Farber, S., Unexpected Death in Early Life, New Eng. Med. Jour., 219:836, 1938.
2. Abramson, Harold, Accidental Mechanical Suffocation in Infants, J. Pediat., 25:404, Nov., 1944.
3. Werne, J. and Garrow, I., Sudden Deaths of Infants Allegedly Due to Mechanical Suffocation, Am. Jour. Pub. Health, 37:675, June, 1947.
4. Werne, J., Postmortem Evidence of Acute Infection in Unexpected Death in Infancy, Am. J. Path. and Bact., 18:759, July. 1942.
5. Holt and McIntosh, Holt's Diseases of Infancy and Childhood, 11th ed., Appleton-Century, N. Y., 1939, p. 61.
6. Neter, E., Webb, C. R., Shumway, C. N. and Murdock, M. R., Study on Etiology, Epidemiology, and Antibiotic Therapy of Infantile Diarrhea, with Particular Reference to Certain Serotypes of Escherichia coli, Am. Jour. Pub. Health, 41:1490, Dec., 1951.
7. Randall, K. J., Suppurative meningitis in Newborn due to coliform bacilli, J. Clin. Path., 1:150, May, 1948.
8. Vignec, A. J., Murphy, T. F., Vidal, I. E. and Julia, J. F. Epidemic Diarrhea of Newborn During and After Neonatal Period, Am. J. Dis. of Children, 79:1008, June, 1950.
9. Fraser, M. D., Bact. Coli Meningitis in the Newborn Lancet, 1:420, February 23, 1952.


## LETTERER-SIWE DISEASE: REPORT OF A CASE*


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Systemic reticulo-endothelial granuloma, including Letterer-Siwe disease, Schuler-Christian disease, and eosinophilic granuloma, was extensively reviewed by Laymon and Sevenants(1) in 1948. These authors emphasized the cutaneous as well as the internal manifestations which may occur in this group of diseases. There is considerable evidence that these three diseases represent variations of the same basic disorders of the reticulo-endothelial system. Letterer-Siwe disease, since it is more rapidly fatal, does not show lipids in the tissues as does Schuller-Christian disease which runs a more protracted course. Bone lesions are comparable in all three diseases, but occur more constantly in eosinophilic granuloma. The cutaneous manifestations are varied and overlapping in the three conditions. Although the following case is reported as Letterer-Siwe disease, there are some features which show its close relationship to SchulerChristian disease.

### REPORT OF CASE

J. M. K., a 17 month old, white male infant, was first seen in the office in November, 1949. The chief complaint was that of a crusting, itchy eruption in the scalp of 14 months' duration. The child was born in a small mining community in northern Arizona, was premature at birth, weighing 4 lbs. 8 oz., and was placed in an incubator for 3 weeks. There were no siblings. The patient had had no previous communicable diseases and no immunizations. There was no history of familial or hereditary diseases.

The child had been given evaporated milk formula, vitamins, cereal, eggs, and meat at the usual age. He sat at 6 months and walked at 14 months, but apparently had never been well, and showed poor weight gain. At the age of 3 months the parents had noted pin-head sized, crusted, itchy spots scattered throughout his scalp. Various proprietary remedies had been applied locally for 9 months without success. Several dermatologists were consulted and the diagnosis of infantile eczema and seborrhea were considered. Various types of medications were prescribed locally, including sulfur, resorcin, ammoniated mercury ointment, boric acid compresses, and Burow's solution, each of which tended to clear the condition for a few days with sudden recurrence of the eruption in spite of continued active therapy.

Examination of the scalp revealed a rather diffuse, erythematous, scaly, crusted, papular eruption with marked thinning of the hair. When the crusts were removed a moist weeping surface was evident, without bleeding. Because of the striking seborrheic nature of the eruption one more trial was made with two percent resorcin, three percent salicylic acid, and five percent sulfur in a cold cream base.

The parents returned six weeks later giving the same story of complete regression of the eruption for two weeks and then a prompt reappearance in spite of continuous use of the ointment. During this interval a similar eruption appeared on the trunk, particularly on the upper back and chest, and the mother called attention to an ulceration in the right groin which had appeared in the past two weeks. Severe constipation had been noted since the previous visit, and the mother had administered

*Presented at the regular luncheon meeting of the Gold-Headed Cane Club, November 8, 1951.

daily soap and water enemas, which in the past two weeks returned blood. Penicillin, administered for an "upper respiratory infection" in another city, had had no effect on the eruption.

Punch biopsies were taken of several scalp lesions and of one lesion on the back. Histologically, these areas showed a very thin epidermis beneath which there was a pronounced cellular infiltrate composed of closely packed reticular cells some of which had an indistinctly foamy cytoplasm. Sudan IV stains for fat were negative. The histologic diagnosis was non-lipoid histiocytosis.

A pedatric consultation was then arranged and the patient was hospitalized for further study in January, 1950.

On admission the temperature, pulse rate, and respirations were normal. There was a crusted seborrhea-like eruption on the scalp and a papular eruption on the trunk simulating keratosis follicularis. The right groin showed a silver-dollar sized, grossly infected ulceration. There was purulent discharge from the right ear and generalized lymphadenopathy. The liver was palpable 2 cm. below the costal margin and the spleen was enlarged 1 cm. below the costal margin.

Laboratory examination of the blood revealed the following: RBC 3,380,000; hemoglobin 9.8 gm; WBC 12,850; differential count, neutrophils 52, lymphocytes 47, eosinophiles 1, monocytes 9. The urine contained 120 mgm percent of albumin; no sugar; many leucocytes and bacteria. Bence-Jones protein was not present. Culture of the drainage from the right ear showed gram-positive staphylococci. Culture of the urine showed B. pyocyaneus. The non-protein-nitrogen was 39.5 mgm percent. The blood cholesterol was 303 mgm percent, with cholesterol esters 250 mgm percent. A roentgenogram of the chest showed an irregular fine mottling throughout both lung fields, more marked at the inner aspect of the bases Roentgen ray diagnosis was broncho-pneumonia, but a parenchymatous infiltration could not be excluded. Roentgenograms of the skull were normal.

Several transfusions were given in the hospital which improved the red blood cell count and hemoglobin. Penicillin, 25,000 units every 3 hours, and aureomycin by mouth did not alter the high white count or the urinary findings over a 10 day period. Liver, iron, and a low fat diet were prescribed.

The child was discharged unimproved 10 days after admission with the diagnosis of Letterer-Siwe disease.

Soon after leaving the hospital a tonsillar mass appeared which became ulcerated and gradually enlarged over a period of several months. Ulcerations appeared in the axillae and about the anus. The eruption on the scalp became much worse spreading anteriorly over the face, neck, trunk, back, ears, and into the ear canals. The finger-nails became dystrophic and brownish in color, and several dropped off. Hyperplastic lesions and ulcerations appeared on the gums, which bled easily. The liver became palpable 4 cm. below the costal margin and the spleen 3 cm. below the costal margin.

In August, 1950, the child was taken to Children's Hospital in Denver where the diagnosis of Letterer-Siwe disease was confirmed. Serum cholesterol taken at that time was 335 mgm. percent. Bone marrow studies showed only myeloid hyperplasia. Complete roentgenographic studies of the long bones and skull were negative. The white blood count was 25,300. The patient was given a 12 day course of cortisone, receiving a total of 1,150 milligrams. The only change noted was a slight improvement in the skin.

Six months after discharge from the hospital in Denver, the child was seen again in the office. At this time, he was taking 25 mg. of cortisone once every 10 days. He was severely jaundiced, with marked atrophy of muscles and the skin, and generally appeared moribund. The parents refused further hospitalization or treatment for the child.

## DISCUSSION

Dermatologists in the past have paid little attention to the cutaneous manifestations of systemic reticuloendothelial granuloma. These include purpuric lesions, seborrhea-like lesions, papular eruptions of the trunk, scalp, axillae, and arms, of a yellowish or brown color, and ulcerations of the groins, axillae, and hard palate. Skin lesions are found most commonly in Letterer-Siwe disease and Schuller-Christain disease, altho both diseases may show no cutaneous lesions.

Characteristic findings in Letterer-Siwe disease, besides the skin manifestations, are splenomegaly, hepatomegaly, localized bone tumors (diagnosed by roentgenograms or at necropsy), secondary anemia, and generalized, painless lymph adenopathy. The patient presented here

showed all but the bone tumors which may have been present but undiscovered in the roentgenographic studies done. This disease occurs exclusively in infants. The onset is acute and the course progressively downhill to a fatal termination in a few weeks to several years. Histologic observations consist of a pronounced hyperplasia of non-lipid-storing macrophages in the organs affected, most commonly the skin, bones, spleen, liver, lungs, and lymph-nodes. Histo-pathologically, it is a non-lipid histiocytosis. The cause is unknown.

SUMMARY

A report is made of a case of Letterer-Siwe Disease with clinical observations and laboratory studies.

1. Laymon, C. W. and Sevenants, J. J.: Systemic Reticulo-endothelial Granuloma, Arch. Dermat. and Syph. 57:873-890 (May 1948).

# BASIC *Science* SEMINAR

## BLOOD COAGULATION

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### BLOOD COAGULATION

Normally, five or six minutes after being collected from a person's vein, blood becomes jelled, forming a clot composed of a delicate network of fibrils in which are enmeshed the solid constituents of the blood. After approximately an hour this mass becomes shrunken and there has become expressed a clear straw colored fluid, called serum. If, however, instead of allowing the blood to stand, it is centrifuged immediately after it is collected, again a clear fluid is obtained. This is called plasma, and if left to stand, it too will clot and express serum. Consequently, one may surmise that the mechanism of clotting is a phenomenum of the plasma.

*Classical Theory of Coagulation—*

The classical theory of coagulation was offered in 1904 by Morawitz, Fuld and Spiro. The substances involved in the clotting mechanism according to this theory include prothrombin, thrombin, thromboplastin, ionized calcium and fibrinogen. By the action of thromboplastin, prothrombin becomes converted in the presence of calcium ions into thrombin. Fibrinogen then through the action of thrombin is converted into fibrin in which become entangled the erythrocytes, leukocytes and fragmented platelets, thus forming a clot. Simply, therefore, the classical theory is expressed as follows:

Prothrombin + Thromboplastin + Calcium Ions
→Thrombin

Thrombin + Fibrinogen→Fibrin

*Prothrombin—*

Prothrombin is chiefly produced in the liver, but is also formed to a small extent in the bone marrow(1). The antihemorrhagic vitamin, vitamin K, discovered in 1934, is the governor of the production of this factor of coagulation. A deficiency of this vitamin was found to cause a prolonged coagulaton time. In 1936, it was shown that synthesis of vitamin K occurs in the intestine as the result of bacterial action(2) and therefore, it seems established that the immunity to a dietary lack of vitamin K is due to the synthesis of this vitamin.

Bile is required for absorption of vitamin K3 and the bleeding tendency occurring with obstructive jaundice is brought about by the failure of absorption of vitamin K since no bile is made available. In fact, any interference with its absorption may result in a tendency to bleed, as with sprue, liver disease, biliary or gastrocolic fistula, etc. Hypo-prothrombinemia induced by dicumoral or by salicylic acid, and the hemorrhagic tendency of the newborn, and cholemic bleeding may be eradicated by the administration of vitamin K.

However, the discovery of this vitamin's properties has not contributed to the understanding of the actual coagulation mechanism. Most advances made in the past fifteen years are due to the quantitative methods for determining prothrombin. The one-stage method of determination, simple, yet reliable, was utilized in bringing hypo-prothrombinemias under clinical control.

According to Quick and Stefanini 4 there are two states of prothrombin, free and precursor. For the precursor, prothombinogen, to become free, it must contact a roughened surface. Should this theory be correct, prothrombinogen could not participate directly in hemostasis since there are no rough surfaces intracorporally. Quick 5 indicates that free pro-

thrombin decreases readily with the administration of dicumoral while the prothrombinogen is not effected for several days. The two-stage method of determining prothrombin time measures total prothrombin whereas the one-stage method measures free prothrombin, and since free prothrombin decreases readily with dicumoral, the one-stage method would indicate a decreased prothrombin time several days early and, therefore, it may be concluded that only free prothrombin acts in the immediate process of hemostasis, and that the one-stage method of prothrombin time determination should be used to control hypo-prothrombinemia.

*Thromboplastin—*

Thromboplastin is believed to be present in all body tissue, especially rich in lung and brain tissue. Platelets were thought to be a rich source of thromboplastin as well. Therefore, when blood is shed, thromboplastin would conceivably be liberated from injured tissue and from fragmented platelets, thus initiating the clotting mechanism. However, Quick 6 found that instead of thromboplastin, platelets contained an activator which converted thromboplastinogen in the plasma into thromboplastin which then would react with prothrombin to produce thrombin. Thromboplastin was assumed by most authorities to be a catalyst. Mertz, Seegers and Smith(7) have shown that its reaction with prothrombin is a stoichiometric one, however. It has been suggested that thromboplastin is inactively present in plasma and becomes released on contact with a rough surface(8).

*Calcium—*

A low serum calcium is never a causative factor in hemorrhagic disease. In hypo-parathyroidism where the serum calcium may be depressed to less than one-half the normal value, the coagulation time is not lengthened. It has been generally accepted that ionized calcium is essential for coagulation. According to Quick and Stefanini(9) sodium oxalate when added to blood not only precipitates ionized calcium, but it also removes the calcium from a compound which is essential for coagulation, and that citrate added to blood combines with prothrombin rendering it inactive. Ther studies of prothrombin activity under various types of conditions suggests the presence of a labile factor which is indispensable for coagulation and unstable in decalcified plasma. Lovelock and Burch(10) state that calcium is not essential for the coagulation of blood and that the anticoagulant activity of oxalate and citrate can be explained as due to their ionic change. Calcium-free plasma is said to have clotted on a fivefold dilution, but not in the presence of fluoride or citrate ions; thus suggesting that it is the presence of these ions rather than the absence of calcium which prevents blood containing them from clotting.

*Fibrinogen—*

Fibrinogen is produced in the liver, and a defect of this substance is a rare cause of bleeding. In fact, hemostasis is possible in the absence of fibrinogen. There have been recorded a number of cases wherein there is a congenital lack of this plasma protein. Since these persons do not exanguinate—instead, tend to bleed even less than those with hemophilia—it may be concluded that coagulation does not depend on fibrin plugging.

*New Concept of Blood Coagulation—*

The old classical theory of coagulation leaves much to be explained as, for instance, the function of platelets, the actual source of thromboplastin, the auto-catalytic action of the coagulation reaction, correlation between coagulation and the mechanism of hemostasis.

Quick(5) has presented a new concept of the clotting of blood. He states that an enzyme, thromboplastinogenase, released by platelets, combines with thromboplastinogen from the plasma to produce thromboplastin; also that thromboplastin is obtained from injured tissue, as has been the general conception. The thromboplastin then, according to his theory, joins with the "prothrombin complex" of the plasma, which is made up of calcium, prothrombin and a "labile factor" to produce thrombin. Fibrinogen from the plasma then reacts with the thrombin to produce fibrin.

As stated before, Quick and Stefanini claim that prothrombin exists in two states, free and a precursor they call prothrombinogen, which to become free must contact a roughtened surface.

A " prothrombin labilizing factor" was demonstrated by Quick(11) when he was able to show that stored oxalated human plasma having an increased prothrombin time when mixed with plasma of a dog with hypo-prothrombinemia induced wth dicumoral resulted in a mixture with decreased prothrombin time. A factor gone in the stored plasma evidently was not the same

as that one decreased by dicumoral—consequently, prothrombin must have two components, one instable on storage and another adsorbable to aluminum hydroxide and similar agents. This discovery of Quick's is identical with "factor V" of Owren's(12). The labile factor, essential in thrombin formation, thus disappears in stored oxalated plasma, and, incidentally, like prothrombin, is inactivated at 60° C. Its quantity is determined by noting the amount required to bring the prothrombin time of stored plasma to a fixed value. According to Quick(13), this factor is not an accelerator, since an amount larger than the minimal requirement needed to produce thrombin from prothrombin will not speed up the reaction nor increase the amount produced.

Alexander, et al(14) have concluded that the labile factor is consumed in relation to the amount and the velocity of prothrombin conversion, and that this factor is not a catalyst but an actual reagent used in the process of prothrombin conversion.

A new agent was discovered in 1946 which is said to accelerate the activation of prothrombin into thrombin and is called "accelerator globulin"; it was concluded that this Ac-globulin is probably the same as Quick's labile factor (15, 16).

Therefore, blood contains in addition to classical prothrombin, a labile factor essential for production of thrombin, and dicumoral nor a deficiency in vitamin K effects its concentration. The action of this factor is not certain; it is claimed by some to be catalytic. Quick and Stefanini(17) say it has a stoichiometric action with other clotting factors to form thrombin and demonstrate that with a low labile factor, there is a comparative decrease in the production of thrombin, even with an increased thromboplastin, and, therefore, say:

Thromboplastin + labile factor + calcium + prothrombin → thrombin.

During coagulation, the conversion of prothrombin to thrombin occurs with increasing velocity—an autocatalytic phenomenon. Certain substances arising during coagulation accelerate, activate, or otherwise act as ancillary agents in the conversion of prothrombin to thrombin in the presence of thromboplastin and calcium—they include the serum Ac-globulin, Factor VI of Owren, Serum Prothrombin Conversion Accelerator (SPCA) of Alexander, Prothrombinkinase and Thrombinkinase of Milstone, and the Labile Factor of Quick. It is the opinion of Alexander et al(18) that these substances are alike; that any difference may be due to the difference in technique of study, in the purity and source of material, and in interpretation. They compared the properties of SPCA and serum Ac-globulin, and say SPCA accelerates the conversion of prothrombin to thrombin in the presence of a labile serum component. They believe that "serum Ac-globulin" is a mixture of at least two clotting components, plasma Ac-globulin and SPCA; the former being a plasma component and labile and SPCA being a serum factor, relatively stabile. The labile plasma Ac-globulin is probably identical with the labile factor of Quick and is essential for rapid prothrombin conversion. As SPCA is evolved during coagulation, the reaction is further accelerated, and it appears to Alexander that SPCA is the true "autocatalytic accelerator" of prothrombin conversion.

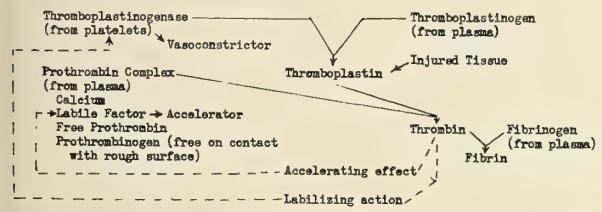
Stefanini(19) says that at first, thrombin is apparently formed slowly with the combination of thromboplastin, prothrombin, calcium and labile factor, but once enough thrombin has been formed, an auto-catalytic mechanism is set in motion with thrombin not only labilizing platelets which sets free the activator of thromboplastinogen, but also converting the labile factor into an accelerator which speeds up the formation of still more thrombin. This accelerator produced by the action of thrombin on the labile factor evidently is identical to factor VI, serum Ac-globulin and SPCA. It is pointed out by Stefanini that the different rate at which thrombin is produced in the presence of labile factor or accelerator explains why the formation of thrombin from prothrombin has been considered by some investigators to be a stoichiometric reaction, and by others, an enzymatic one.

It has been demonstrated that very little thrombin is produced when blood coagulates and that the thrombin is absorbed by fibrin, thus slowing the breaking down of platelets influenced by the thrombin; therefore countering the chain reaction(20). Thrombin, besides producing fibrin from fibrinogen, labilizing platelets to produce the thromboplastinogen activator and converting the labile factor into an accelerator, also causes platelets to liberate a local vasoconstrictor which acts on vessels in the surrounding area(21).

Thus, the function of the cloth is not to act as a plug, but to control the thrombinogenic reac-

tion and produce vasoconstriction by labilizing platelets. The fibrin acts only to delay the thrombinogenic reaction so that the platelets in the clot slowly disintegrate, and a gradual and prolonged production of the vasoconstrictor occurs. Carter and Warner(22) say that fibrinogen may protect Ac-globulin against various physical and chemical agents, and that it may inhibit Ac-globulin activity in the conversion phase of the normal clotting process.

Briefly, therefore, there are three phases in the new concept of blood coagulation. The first phase includes the formation of thromboplastin through the action of an enzymatic agent released by the platelets with thromboplastinogen in the plasma. The second prase is the formation of thrombin by action between prothrombin, thromboplastin, labile factor and calcium; the thrombin labilizes platelets leading to the production of more thromboplastin, and the thrombin also acts to convert labile factor into an accelerator agent (Factor VI, serum Ac-globulin, serum prothrombin conversion accelerator) capable of accelerating the formation of thrombin from prothrombin. The third phase is the reaction of thrombin with fibrinogen to produce fibrin and a clot.




*Anticoagulants—*

It has generally been believed that blood remains fluid in the vessels because thromboplastin in the circulating blood is of a very small amount and, therefore, thrombin is not produced and fibrin is not formed. Any small amount of thrombin in the blood is neutralized by an "anti-thrombin" present in low concentrations in the blood.

In 1918, Howell and Holt(23) obtained a powerful anticoagulant from extracts of liver they called "heparin". Lung, muscle and intestinal wall also contain heparin in large quantities. In serum, however, it is of negligible quantity, and believed not responsible for maintaining the fluidity of blood. Its anticoagulant properties are believed due mostly to its ability to inactivate thrombin; however, Ferguson(24) has shown evidence by experiments that heparin neutralizes the action of thromboplastin. According to Quick, heparin merely intensifies the action of the normal antithrombin of the blood to produce a powerful anticoagulant. Heparin is a product of mast cells, the mobile basophil cells of the tissues, clustered around the small vessels of tissues(25). Murray et al(26) state that besides prolonging the coagulation time, heparin hinders agglutination and deposition of platelets, discouraging formation of thrombin. Clinically, the most important use of heparin is in blood transfusions, operations upon vessels and preventing extension of certain types of thrombus, especially those conditions carrying the threat of fatal pulmonary embolism.

Considering other anticoagulants, biological substances besides heparin would include hirudin from the leech which like heparin, inactivates thrombin; dicumoral from spoiled sweet clover which depresses prothrombin concentration; peptone solution stimulating liberation of heparin from the liver; cobra snake venom. Neutral salt solutions as magnesium sulfate, sodium sulfate and sodium chloride, will slow coagulation but won't prevent it indefinitely. Azo dyes, as Trypan Blue, are powerfully anticoagulant. Coagulation may be prevented by de-calcifying the blood, as has already been discussed, employing the use of sodium oxalate or sodium citrate.

*Hemophilia—*

One of the hemorrhagic diseases is hemophilia, wherein according to Quick(27) there is a congenital lack of thromboplastinogen. The amount of hemorrhage is proportional to the decrease in quantity of this substance. If the circulatory system is intact, no hemorrhage occurs; however, the injury required may be very slight. In a well developed hemophilia, the coagulation time of the blood is greatly prolonged though the bleeding time is normal. There is usually no decrease in the number of platelets. It was generally believed that the essential defect was decreased thromboplastin due to abnormal stability of the platelets, and, therefore, a retardation of the conversion of prothrombin to thrombin, but Quick says this is not the case. The coagulation time test may be normal in mild cases. Any admixtures of tissue juice in the process of collecting the blood makes the coagulation test worthless. The prothrombin consumption test is a much more sensitive test than the determination of the clotting time(28). The clotting time does not

reach pathologic values until below thirty percent of prothrombin consumption. Quick also indicates that the prothrombin consumption test is of diagnostic value in this disease if the platelet count is normal, as only a small amount of prothrombin is used for coagulation since there is a definite decrease in the thromboplastinogen. Since prothrombin and thromboplastin react stoichiometrically, the more thromboplastin, the less prothrombin after coagulation. The thromboplastin available depends on the concentration of thromboplastinogen and platelets. According to Quick if there are over 100,000 platelets per c.m. of blood, the prothrombin consumption test is the measure of thromboplastinogen, but when the platelet count is low, thromboplastin is also decreased, and consequently, little prothrombin is converted. Also, the possibility that anti-thromboplastinogenase (inhibitor of the platelet enzyme) may be increased and causing a hemophilia-like disease must be ruled out.

The accepted treatment of hemophilia includes blood transfusion or direct application of tissue extract to the bleding point. Snake venom has also been usd, applying it directly to the wound.

*Purpura—*

Hemorrhage beneath the skin, from mucous membranes or into joints, commonly known as purpura, occurs in numerous diseases as scarlet fever, small pox, diphtheria, streptococcal infections; also scurvy, leukemia and certain anemias. It may occur with action of certain venoms, drugs and chemicals. Capillary fragility may be the primary cause in some types of purpura, whereas in others the defect may be a decreased number of platelets in the blood, according to the general belief. A reduction of platelets is not capable alone of inducing purpura; an injury to the capillary wall must coexist. A decrease in platelets may result from an increased destruction, or may be due to a decreased production as with leukemia or anaplastic anemia.

Thrombocytopenic purpura is treated surgically by splenectomy, which is usually followed dramatically by a prompt increase in platelets and frequently effects a cure. According to Troland and Lee(29) the spleen is the source of a toxic material which destroys platelets. They found that acetone extracts of spleens from patients suffering with thrombocytopenic purpura, when injected into rabbits, was followed by a prolonged reduction in platelet count. An abnormal number of megakaryocytes have been found in the bone marrow with an increase in the number of younger forms and it has been suggested that these magakaryocytes fail to produce platelets.

When the platelets are reduced as in this disease, there results a decreased amount of thromboplastin produced, since according to Quick (30), platelets are necessary for the activation of thromboplastinogen, and, consequently, little thrombin is produced, thus reducing the prothrombin consumption. It was generally believed that there was no defect in the coagulation mechanism since coagulation time is normal in this dsease. However, the actual hemorrhage is not due to a decreased number of platelets (though this fact does accentuate the bleeding), but, instead, to an increased permeability of the capillaries. It is not known whether this defect in the capillaries is due to a toxic agent or to the lack of a factor necessary for vascular tonicity. Quick and Stefanini(31) emphasize the importance of serum prothrombin activity not only in the diagnosis of hemophilia, but also in thrombocytopenia, where there is an impaired activation of thromboplastinogen. In either case, without activation of thromboplastinogen, thrombin can't be formed. The consumpton of prothrombin during coagulation is slight and consequently the very sensitive one-stage prothrombin consumption test is of diagnostic value. This test consists of adding thromboplastin, labile factor and fibrinogen to serum and measuring the clotting time of the mixture, this being a direct function of the prothrombin left unconverted in the serum. The one-stage prothrombin consumption test doesn't eliminate the accelerator effect, and, therefore, the test has been criticized as nonspecific. The diagnostic value of the test as pointed out by Stefanini and Crosby(32) is not compromised by the serum accelerator effect since it is not of such magnitude as to modify the results of the prothrombin consumption test to any extent.

*Hemophilia-like Disease—*

There exists a hemophilia-like disease which occurs in both sexes. Blood of a patient with this disease is believed to contain an inhibitor to coagulation since this blood when mixed with normal blood results in a mixture with a pro-

longed coagulation time; whereas, mixing blood of a patient with hemophilia with normal blood resulted n a mixture with a normal coagulation time(33). This inhibitor is believed to act on the thromboplastinogen activator(34). Blood transfusions are of no help in this disease. Evidently the inhibitor is in such a great concentration that it prevents even the new blood from coagulating.

*Thrombosis—*

Intravascular clotting may occur in the human body from several causes. It is doubtful whether such clotting occurs as a direct result of an increase in any of the elements of the clotting mechanism present in the circulating blood. Under certain circumstances, the probable factor is the liberation of thromboplastin with injury of tissue cells; however, the effect is confined to the region of the injury. A thrombus may be formed simply by clotting of blood in the usual way as occurs in an injured vessel. Also, cellular elements of blood may form a solid mass within a vessel independent of the clotting process as in smaller vessels when erythrocytes agglutinate as after a transfusion of incompatible blood. A true clot may then form in the stagnant blood column. Toxic thrombosis may occur with the arsenicals, mercurials, poisonous mushrooms, certain snake venoms, extensive burns, etc., but whether it occurs by injury to the vessel wall, destruction of blood elements or through their effects upon some phase of the clotting process is obscure. Infection is a common cause, destroying endothelium and liberating thromboplastin from injured tissue and disintegrated platelets, releasing its activator. Thrombosis of the veins of the lower limbs following operations upon the abdominal or pelvic organs is not uncommon—a cause for concern since there may be embolus formation.

Though the slowing of venous flow as with feeble heart action, confinement in bed, immobility of legs, low metabolic rate, etc., is probably the most important factor in the production of postoperative thrombosis, alteration in the blood itself following tissue injury including an increase in the platelet count, tendency for platelets to clump together, increase in amount of fibrinogen in the blood (increasing the sedimentation rate) undoubtedly favor the formation of a thrombus. Anhydremia also will encourage thrombosis. Therefore, prophylaxis should include early ambulation; encouragement of respiration to aid venous return, administration of thyroid extract to increase metabolism and circulatory rate, and of fluids to prevent dehydration; prescription of a high carbohydrate diet since high protein will increase formation of fibrinogen and platelets; administration of anti-coagulants (heparin, sodium thiosulfate, etc.).

*Summary—*

The classical theory set forth by Morawitz in 1904 and dominating the field almost to the present time represented a useful basis for studies of blood coagulation and the pathogenesis of hemorrhagic diseases; however, recent investigations have established significant findings that can't be reconciled with this old concept. Several new technical approaches have been made in the study of the clotting of blood which have helped considerably to make up for the shortcomings of the old theory, and allow for a better understanding and more accurate control of the hemorrhagic diseases, as well as offer a foundation for still greater achievements towards solving the true physiology of coagulation.

1. Drinker, C. K.: Am. J. Physiol. 41:5, 1910.
2. Almquist, H. L. and Stockstad, E. L. R.: J. Nutrit., 12:329, 1936.
3. Greaves, J. D. and Schmidt, C. L. A.: Proc. Soc. Exp. Biol. Med. 37:43, 1937.
4. Quick, A. J., and Stefanini, M.: The State of Component A (Prothrombin) in Human Blood; Evidence That It Is Partly Free and Partly In An Inactive or Precursor Form, J. Lab. & Clin. Med. 34:1203, 1949.
5. Quick, A. J.: A New Concept of the Clotting of Blood and the Hemorrhagic Diseases, J. Missouri St. Med. Assoc. 749, 1950.
6. Quick, A. J.: Studies on the Enigma of the Hemostatic Dysfunction of Hemophilia, Am. J. M. Sc. 214:272, 1947.
7. Mertz, E. T., Seegers, W. H., and Smith, H. P.: Prothrombin, Thromboplastin and Thrombin: Quantitative Interrelationship, Proc. Soc. Exper. Biol. & Med. 42:604, 1938.
8. Lenggenhager, K.: Irrewge der Blutgerinnungsforschung. Klin. Wschnsch. 15:1835, 1936.
9. Quick, A. J., and Stefanini, M.: Chemical State of the Calcium Reacting in the Coagulation of Blood, J. Gen. Physiol. 32:191, 1948.
10. Lovelock, J. E., and Burch, B. M.: Blood Clotting: The Inhibition by Anions and the Function of Calcium, Biochem. J. XXXIV, 1951.
11. Quick, A. J.: On the Constitution of Prothrombin, Am. J. Physiol. 146:212, 1943.
12. Owren, P. A.: New Investigation on the Coagulation of Blood, Arbok for det Norske Videnskopsakademi, 1944, p. 21.
13. Quick, A. J., and Stefanini, M.: The Concentration of the Labile Factor of the Prothrombin Complex in Human, Dog and Rabbit Blood. Its Significance in the Determination of Prothrombin Activity, J. Lab. & Clin. Med, 33:819, 1948.
14. Alexander B., Landwehr, C. and Goldstein, R.: Labile Factor of Prothrombin Conversion: Its Consumption in Normal and Abnormal Blood Coagulation, Federation Proc. 9:4, 1950.
15. Fantl, P., and Nance, M. H.: Activation of Prothrombin, Australian J. Sc. 9:117, 1946.
16. Ware, A. G., Guest, M. M., and Seegers, W. H.: A Factor in Plasma Which Accelerates the Activation of Prothrombin, J. Biol. Chem. 169:231, 1947.
17. Quick, A. J., and Stefanini, M.: The Concentration of Component A. in Blood, Its Assay and Relation to the Labile Factor, J. Lab. & Clin. Med. 34:973, 1949.
18. Alexander, B., Goldstein, R., and Landwehr G.: The Prothrombin Conversion Accelerator of Serum (SPCA): Its Partial Purification and Its Properties Compared with Serum Ac-Globulin, J. Clin. Investigation 29:881, 1950.
19. Stefanini, M.: Newer Concepts of the Coagulation of Blood, Bull. N. Eng. Med. Center XII: 51, 1950.
20. Quick, A. J., and Favre-Gilly, J. E.: Fibrin, A Factor Influencing the Consumption of Prothrombin in Coagulation, Am. J. Physiol. 158:387, 1949.
21. Zucker, M. P.: Platelet Agglutination and Vasoconstriction as Factors in Spontaneous Hemostasis in Normal, Thrombocytopenic, Heparinized and Hypoprothrombinemic Rats, Am. J. Physiol. 148:275, 1947.

22. Carter, J. R., and Warner, E. D.: Protective Effect of Fibrinogen on Accelerator Globulin, Proc. Soc. Exper. Biol. & Med. 74:388, 1950.
23. Howell. W. H., and Holt, E.: Am. J. Physiol. 42:328, 1918.
24. Ferguson, J. H.: Proc. Soc. Exp. Biol. Med. 42:33, 1939.
25. Skaud, W. O.: Arch. Physiol. 81, 1938; Supp. 15, p. 89.
26. Murray, D. W. G., Jaques, L. B., Perrett, T. S., and Best, C. H.: Surgery, 2:163, 1937.
27. Quick, A. J.: Pediatric Aspects of Hemophilia, Pediatrics, 3:312, 1949.
28. Soulier, J. P.: Study of Prothrombin Consumption. Practical Interest for the Diagnosis of Hemorrhagic Diseases, Acta Med. Scandinav. 137:1, 1950.
29. Troland, L. E., and Lee, F. C.: Bull. J. Hopk. Hosp. 62:85, 1937.
30. Quick, A. J., Shanberge, J. N., and Stefanini, M.: The Role of Platelets in the Coagulation of Blood, Am. J. Med. Sc. 217:198, 1949.
31. Quick, A. J., and Stefanini, M.: Activation of Plasma Thromboplastinogen and Evidence of an Inhibitor, Proc. Soc. Exper. Biol. & Med. 67:111, 1948.
32. Stefanini, M., and Crosby, W. H.: The One-Stage Prothrombin Consumption Test, Blood V, No. 10, 1950, p. 964.
33. Lozner, E. L.: Joliffe, L. S., and Taylor, F. W. L.: Hemorrhagic Diathesis with Prolonged Coagulation Time Associated with a Circulating Anticoagulant, Am. J. Med. Sc. 199:305, 1940.
34. Quck, A. J., and Stenfanini, M.: Activation of Plasma Thromboplastinogen and Evidence of an Inhibitor, Proc. Soc. Exper. Biol. & Med. 67:111, 1948.

# PHOENIX *Clinical* CLUB

## MASSACHUSETTS GENERAL HOSPITAL CASE NO. 36291

**The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.**

First admission. A fifty-two-year-old bartender was admitted for repair of a right scrotal hernia.

The patient had been told that he had a "touch of gout" and a "skipping heart" for years. Physical examination, in addition to the hernia, showed an rregular heart rhythm, wth a rate of 80 to 90. Urinalysis was negative; the blood nonprotein nitrogen was 19mg., and the blood uric acid 2.7 mg. per 100 cc. The operation and convalescence were uneventful.

Second admission (Five years later). The patient was readmitted because of an attack of gross hematuria. He had been well in the interim up until one week prvious to this admission, when he noted easy fatigability and weakness. The right knee became swollen, and the urine was noted to contain gross blood. This lasted for four days.

He had had slight nocturia of some years' duration, but no frequency, dysuria or hesitancy. For two years he had exertional dyspnea with palpitation usually coming on after a heavy meal or on climbing stairs. There was no history of chest pain or ankle edema. Up until five years previous to admission for a period of six years there had been intermittent swelling of the knees, ankles and left great toe lasting from a few days to a few weeks. There was a history of heavy alcoholic intake up until two years previous to this admission. Physical examination showed a palpable, firm nodule in the right lobe of the thyroid gland, cardiomegaly, auricular fibrillation, a Grade III apical systolic murmur and a recurrent inguinal incisional hernia. The lungs, abdomen, extremities and prostate were negative.

The temperature was 99°F., the pulse 96, and the respirations 20. The blood pressure was 155 systolic, 110 diastolic.

Urinalysis showed a specific gravity of 1.005 and 10 to 12 red cells and 3 or 4 whte cells per high-power field in the sediment. Cystoscopy demonstrated a normal urethra and bladder. The ureters were easily catheterized, clear urine coming from each. A retrograde pyelogram disclosed a calculus in the region of the left middle calyx. After injection it was noted that this appeared to be in a cavity. The patient was discharged on the second hospital day.

Third admission (two months later). In the interval he was followed in the Out Patient Department. The serum calcium was 9.2 mg., the phosphorus 3.3 mg., the alkaline phosphatase 3.1 units, the total protein 6.8 gm, the uric acid 4.7 mg., and the nonprotein nitrogen 18 mg pe.r 100 cc. Guinea-pig inoculation of the urine was negative for tubercle bacilli. X-ray study of the chest showed the heart to be markedly enlarged in all chambers but more so on the left. A gastrointestinal series and x-ray examination of the neck were negative.

The patient had been passing small amounts of blood in the urine intermittently snce the previous admission. However, his strength and appetite were good. There were no new symptoms, and physical examination, an x-ray film of the chest, an electrocardiogram and laboratory data were essentially the same as at the previous admission.

Urinalysis on admission showed a specific gravty of 1.018, a+ test for albumin and 100 red cells per high-power field in the sediment. There were abundant colon bacilli and Staphylococcus aureus on culture. A urinary determination for cystine was negative, and a twenty-four-hour urinary specimen revealed a total calcium excretion of 48 mg.

On the sixth hospital day a nodule was excised from the right lobe of the thyroid gland under local anesthesia. The pathological report was nontoxic nodular goiter, with organized and canalized hematoma. He was discharged on the fifth postoperative day after an uneventful convalescence.

Fourth admission (seven months later). The patient had ben well except for one episode of passing dark-red blood in the urine for a few hours six weeks previously. A retrograde pyelogram showed a rounded calcium density overlying the left kidney measuring 7 mm. in its greatest dimension. The left kidney was slightly lower than the right and appeared slightly larger. On the left only the middle and lower calyxes filled. The calcium density appeared to lie within a major calyx, which came off close to the renal pelvis. The right ureter, pelvis and calyxes were normal. The hemoglobin was 12.8 gm., and the white-cell count 8000. Urinalysis showed a specific gravity of 7.012, a + test for albumin and an occasional red cell and 10 white cells per high-power field. Urine cultures were negative. He was discharged on the second hospital day.

Fifth admission (six weeks later). The patient had been well and had worked until a week previous to this admission. Then after passing "lemon-colored" urine he experienced chilly sensations followed by fever and malaise and accompanied by urinary frequency of once an hour, with some burning on micturition. This condition gradually abated over the next five days. For the twenty-four hours prior to admission he took one sulfonamide tablet every four hours, and on admission the symptoms had completely disappeared and the urinary frequency was every four hours. He believed that he had lost 10 to 15 pounds in the six weeks prior to admission. He was taking digitoxin, 0.2 mg. every day, and on this medication was no longer bothered by dyspnea or palpitation. There had been no recent attacks of joint pain.

Physical examination revealed slight distention of the neck veins, a moderately irregular pulse, cardiomegaly and a Grade II apical systolic murmur. The liver edge was palpable two fingerbreadths below the costal margin. There was moderate tenderness and voluntary spasm in the left upper quadrant of the abdomen to bimanual palpation. The right inguinal incisional hernia was easily reducible.

The temperature was 99°F., the pulse 94, and the respirations 25. The blood pressure was 130 systolic, 90 diastolic.

Examination of the blood revealed a hemoglobin of 13.4 gm. and a white cell count of 13,300. Urinalysis showed a specific gravity of 1.010 with a ++ test for albumin and innumerable white cells in the sediment. Culture of the urine grew a few colon bacilli. The nonprotein nitrogen was 37 mg. per 100 cc. An electrocardiogram and chest x-ray film were as before.

On the fourth hospital day the temperature was 101°F. The patient complained of pain in the right great toe, which externally appeared normal. Tenderness in the left upper quadrant to bimanual palpation was still present, and there was no costovertebral-angle tenderness. The white-cell count was 11,500, with 84 per cent neutrophils. On the following day the temperature was normal, and he felt well, but there was some swelling, redness and warmth of the right knee thought to be mainly periarticular The blood uric acid was 5.6 mg. per 100 cc., and the basal sedimentation rate was normal. An intravenous pyelogram was essentially similar to previous pyelograms except that on the left, in addition to a nonfilling superior calyx, there was incomplete filling of the middle calyx. Following 1 cc. of Mercuhydrin intramuscularly he lost 4 pounds in weight, the liver was no longer palpable, and the neck veins were less distended. By the thirteenth hospital day the temperature was normal, the knee was no longer swollen, and there were no subjective complaints. On the fourteenth hospital day an operation was peformed.

J. D. HAMER, M.D.

The case in question today concerns a 54 year old bartender who was reported to have several abnormal conditions; a nodular mass in the thyroid gland which later turned out to be a non-toxic adenoma after excision and pathological study; the findings of an enlarged, fibrillating heart, with a systolic mitral murmur which can be assumed to be rheumatic in origin,

and showing the signs and symptoms, at intervals, of moderate to mild decompensation. He had an inguinal hernia which was repaired, later tho, to recur; recurring flareups of arthritic symptoms in various tissues about the joints, either on a rheumatic basis, or, thought to be at one time, gouty in origin. Several uric acid determinations done during the several hospital admissions were within normal limits except at the time of his fifth hospital day, the value was recorded at 5.7 mgs. per 100 c.c. of blood.

The chief condition of interest, in this case, however, centered around the repeated admissions to the hospital because of episodes of hematuria, variable in amount and duration. Several studies were made for the purpose of finding the cause for the hematuria. A calculus was demonstrated on several occasions by pyelograms. It was found in the left kidney, and at the time of the later admissions, the urinary tract presented the signs and findings of an infectious process also. The patient was operated for some reason during his fifth admission. The record doesn't state whether the operation was done on the urinary tract, or for the purpose of repairing the recurring hernia again.

It is reasonably well established that the hematuria in this man resulted from some condition above the bladder, for we are told that the urethra and bladder were normal to cystoscopic examination. We then have to trace the origin of the bleeding in the prostate, the ureters, or one or both of the kidneys, or to some systemic process.

Of the systemic processes, it seems logical to exclude all of them, except that it is possible for the fibrillating heart to cause embolic infarctions in one or both kidneys, resulting in repeated attacks of hematura. Of the acute or chronic infections which at times cause hematuria, the possible presence of some degree of rheumatc fever, or possibly rheumatic endocarditis, (with renali infarctions) are the only conditions having any possible bearing on this case Such systemic diseases and general conditions as blood dyscrasias and leukemias, deficiency and dietary diseases (Scurvy, etc.); hematuria due to medications (Urotropin, sulfonamides, mandelic acid, salicylates, barbiturates and cantharides), and the diseases of unknown etiology, as (Hodgkins disease, periarteritis nodosa), and the nephrosclerotic kidneys, all seem to have no place in this man's difficulties as a cause for the hermaturia.

We must pass on then to a discussion of the intrinsic diseases of the upper urinary tract for the answer. Five major causes for hematuria are recognized: 1, calculus; 2, tumors; 3, tuberculosis; 4, infections other than tuberculosis; and 5, nephritis in one of its component entity forms. Pyelograms have previously demonstrated a calculus associated with the left kidney, seemingly sitting in a cavity of some causation, in this particular case.

What renal causes are there for hematura. We think of calculus, nephritis, tumor, (capsular or parenchymal); infection, acute or chronic, including tuberculosis, and anomalies of the kidneys, such as polycystc kidneys, pelvic kidneys, or horseshoe kidney, and trauma.

Of the causes of hematuria from the ureters, the same can be said, and, in addition, stricture and aberrant blood vessels, and from the prostate, we think of calculi, tumors, infections, tuberculosis and vascular engorgement.

Below this organ, there are other conditions not applicable here, associated with the baldder, bladder neck, and urethrae.

In this case, we have the presence of a demonstrated calculus and secondary infection at times. These conditions could be the source of the hematuria, but its quite difficult to imagine the judges' picking a case for discussion so easy of analysis. Was the operation done to remove the stone to prevent future hemorrhage? Could be—it has been done before. I have a feeling tho that the cavity in which the calculus seems to be embeded was of great interest to the clinicians. What could it be, a cystic tumor formation, a tuberculous cavity, a pyogenic cavity, a cyst from some type of rare infection, an abscessed infarct, or a ruptured adrenal gland tumor or infection encroaching upon or into the left kidney? The answer isn't clear from the record, except all studies for tuberculosis are reported to be negative. My own feeling causes me to place the cause of the hematuria in this case upon the presence of some type of transluscent new growth, with present of a calcification, in the left kidney.

ROBERT H. CUMMINGS, M. D.

I am uncertain as to whether I should thank Judge Dysart for allowing me the opportunity to discuss this case of renal calculus. My instincts cry out that pilfalls await the unwary urologist today.

Our patient is a fifty-seven year old bartender given to heavy alcoholic intake in the past, and who experienced acute attacks of arthritis of transient duration leaving, up till now, no permanent joint changes. These arthritic attacks involved the knee and great toe. The last attack was precipitated by, or was at least associated with, an acute urinary tract infection. This history together wth a suggeston of elevation of the blood uric acid concentration, leads me to believe that this man suffered from gout.

Likewise, he experienced periods of cardiac decompensation, requiring digitalis and mercurial diuretics for control. He was hypertensive, had an enlarged heart, but had reported normal electrocardiographic studies.

Lastly, he demonstrated hematuria on many occasions over five years. A calculus was detected in the left kidney.

The problem appears to me to be an attempt to relate these seemingly separate entities and to do so if possible.

Gouty individuals more commonly are hypertensive and show arteriosclerotic changes. In the case today the heart disease could be related to his gouty diathesis in the absence of evidence of thyrotoxicosis or a history of rheumatic fever. Persons with gout commonly pass renal calculi.

So far all seems straight forward but as I consider this renal calculus I have misgivings. Uric acid calculi are usually small, multiple, and non-opaque. This is a single calculus and is radio-opaque.

At this point it would be essential to see the x-rays, for without them I am at the mercy of the radiologist's reports. All physicians should personally review all x-rays, and this is especially important in urological work.

The first cystoscopy revealed a normal lower urinary tract, so the hematuria must have arisen from the upper urinary tract, where a calculus, size not stated, lay in a cavity in the region of the left middle calyx. Were I to see these films, I would attempt to decide whether this calculus lay in the cavity of the middle calyx or whether it lay in a cavity outside the middle calyx. If the former were true, the situation would not be unusual. But, a cavity outside the middle calyx brings up the question as to whether this cavity is a calyceal diverticulum, a congenital defect in which stasis occurs and in which calculi may form, or whether this cavity is a cortical abscess as found in renal tuberculosis. The calculus must be in a cavity connected with the calyx, for it was outlined on retrograde pyelography and thus intra-parenchymal calcification such as occurs in clear cell carcinoma of the kidney or hydatid disease is not possible. It should be noted here that evidence of acid fast bacilli in the urine was not found, and it may be assumed since this was never refuted that the cavity was not a tuberculosis cortical abscess. From the x-ray alone we may say that we have ruled out tuberculosis, clear celled carcinoma, and hydatid disease.

Nine months later a repeat retrograde pyelogram revealed a 7 cm. calculus seemingly lying in a major calyx and non-filling of the superior calyx was demonstrated. Were I to see these films I should like to know, was the kidney larger and lower than revealed by the previous films? Was the calculus in the middle calyx as implied in the first films, or was it blocking the superior calyx preventing its filling? This information is in those films and is denied me because of inadequate description and comparison.

On the last admission an intravenous pyelogram was said to be similar to the others except that now the middle calyx was incompletely filled. It thus appears that over ten and one-half months there was progressive blocking of the upper portion of the kidney, by an actively changing lesion not dependent upon change in size or position of the calculus alone.

I draw the following conclusions from this information: A calculus formed in the left kidney not because of excessive uric acid excretion, for their calculi are small and non-opaque. It formed rather because of stasis in one segment of the left calyceal system. It could have formed in a congenital calyceal diverticulum or as a result of blocking from another pathological process such as papillary neoplasm of the calyx.

Certainly the blockage of the superior and middle calyx resulted from a progressive lesion over a period of ten and one-half months, and the process could have been present as long as five years according to the history of hematuria.

I am reminded here of a patient I saw four years ago who had a left renal calculus in an upper calyx, who at the time of surgery showed an extensive squamous cell carcinoma of the pelvis of the kidney. This is a diagnosis that cannot be made before surgery, but is frequently

associated with calculi and chronic infection.

It is my belief that this gouty, ruptured individual with hypertensive arteriosclerotic heart disease had a left nephrectomy after treatment of cardiac decompensation. He probably survived the surgery, and the examination of the kidney comprises the pathological examination. I believe the kidney showed a calculus, associated with a transitional cell carcinoma, probably papillary, but possibly squamous cell carcinoma.

## DIFFERENTIAL DIAGNOSIS

Dr. Richard Chute*: In this case it seems to me that we are dealing with three abnormal conditions—gout, heart disease and a renal lesion. I should like to start with the first two, and then discuss the renal lesion last.

There is no doubt that this patient had gout. The considerable period of years during which he had had intermittent attacks of swelling and pain in various joints, including the great toe, the steady increase of the blood uric acid to an eventual abnormally high value of 5.6 mg. per 100 cc. (normal, 2 to 4.5 mg. per 100 cc.), his age and his occupation (bartender), and his alcoholic history, all lead me to a diagnosis of gout. Tophi are not mentioned, but they occur in only about 50 per cent of cases of gout and therefore are not necessary to make the diagnosis.

Secondly, the patient went into congestive heart failure. Although hypertension was not a feature, the heart was markedly enlarged, suggesting longstanding inadequacy. Even though no history of rheumatic fever is given, enlargement of the heart, with a loud apical systolic murmur, is very suggestive of mitral-valve dammage with regurgitation. Also, auricular fibrillation is frequently associated with chronic rhumatic heart disease, especially mitral stenosis. Another possible etiology of the cardiac disturbance, although I do not believe that it has to be considered seriously in this case, is degenerative cardiovascular disease, which may be a complication of late gout and may lead to coronary or cerebrovascular accidents. The vascular lesions in gout are nonspecific and contain no tophi, but intracardiac tophi have been seen. However, in my opinion, the whole picture of this patient's cardiac trouble can be best explained on the basis of an old rheumatic heart disease.

Apparently, the nodule in the thyroid gland that turned out to be a non-toxic nodular goiter was noncontributory.

Now we come to the renal lesion. The patient has been known to have hematuria on and off for many months. Since the urinary bladder and urethra were normal, the evidence indicated that the blood came from the level of the bladder, and presumably from the pathologic-appearing and tender left kidney. Tumor in the urinary tract is the most frequent cause of hematuria, and when one is dealing with a patient in the cancer age (fifty-seven), malignant tumor is by far the most common source of blood in the urine. The loss of considerable weight during the six weeks prior to the last admission, despite the accumulation of fluid due to cardiac decompensaton, is compatible with cancer. However, he was not anemic, and it must be remembered that he was taking digitoxin, which might have cut down his appetite and thus his weght. Stone is also a not uncommon cause of hematuria, and has to be seriously considered in this case. Renal tuberculosis may causse bleeding, but that was thought of and pretty well ruled out by the fact that the guinea pigs inoculated with urine proved to be negative for tuberculous infection.

May we see the x-ray films, Dr. Wyman?

Dr. Stanley M. Wyman: The first chest film taken four years previous to the last admission shows a heart markedly enlarged, particularly to the left, probably in the region of the left ventricle and the left auricle. It pushes the esophagus posteriorly. The aorta is quite tortuous—in keeping with the known hypertension. The displacement of the esophagus is well demonstrated on a film taken three years later, this being due to the enlarged left auricle, which I think, as Dr. Chute has suggested, is quite consistent with rheumatic heart disease. There is some pulmonary congestion. The stomach reveals no intrinsic disease. There is a small diverticulum of second portion of the duodenum. The pyelograms were done over a period of approximately a year prior to the last entry, and they show a focal density on the left that measures 7 mm. in diameter. The original examination fourteen months prior to the last examination shows the kidney shadows to be fairly symmetrical; the upper pole of the left kidney, however, is not well seen. The calyxes of both kidneys are well outlined by the original retrograde examination, and some localized

*Associate visiting urologist, Massachusetts General Hospital.



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hydronephrosis about the stone is seen. There are no other very gross changes. The last film, taken almost a year later, shows the left kidney to lie considerably lower in position than previously. At this time the upper major calyx fails to fill. It is impossible for me to outline the left kidney adequately, but its upper pole certainly seems a little fuller. The last examination by intravenous pyelogram shows essentially the same findings as the retrograde—namely, downward displacement of the left kidney and inadequate filling of the upper and middle major calyxes. I think it is worth noting that the lateral middle major calyx seems to be displaced on the retrograde and intravenous pyelograms when compared to the original retrograde examination.

Dr. Chute: Let us discuss what could give the picture of calcification and apparently a growing mass in the upper pole of this kidney. Of course, the perfectly obvious thing is tumor. Incidentally, tumors rarely have calcified flecks in them, but I think this picture is rather different from that. This calcified shadow is rather interesting in appearance because it is in a ring shape, which may mean calcification of either the splenic or the renal arteries or occasionally a renal aneurysm, which I think would be a little more medial in position. However, its position within the kidney outline suggests that it really was a stone. Tuberculosis might give calcification, but probably of a more diffuse or mottled character, and I doubt if it would cause a growing lesion in the upper pole. Another possibility is calcification of the wall of a cyst, but the cyst could also be seen. Another thing that probably would not produce calcification, however, is carbuncle of the kidney. This patient's hematuria over a good many months makes me believe carbuncle was not present. Calcified mesenteric lymph nodes are very common, but they tend to shift around and are characteristically mottled in appearance. Therefore, I shall make the obvious diagnosis and say that I believe this patient had a stone and also a kidney tumor, presumably renal-cell carcinoma.

Dr. Walter S. Kerr, Jr.: The kidney was easily palpable and was about three times the normal size.

Dr. Chute: That makes me feel happier temporarily.

CLINICAL DIAGNOSIS

Left-renal tumor.

DR. CHUTE'S DIAGNOSIS

Renal-Cell carcinoma.

Nephrolithiasis.

ANATOMICAL DIAGNOSIS

Papillary carcinoma of kidney, with lymph-node metastasis.

Nephrolithiasis.

PATHOLOGICAL DISCUSSION

Dr. Tracy B. Mallory: Dr. Kerr, I believe you operated upon this patient.

Dr. Kerr: It seemed most likely that the kidney contained a tumor, and we thought the most likely tumor was a renal-cell carcinoma as Dr. Chute did. The kidney was exposed and found to be very firm on its surface, and resection was carried out. Several enlarged lymph nodes near the aorta, one of which was over 1.5 cm. in size and was probably involved by tumor, were also removed.

Dr. Mallory: The upper pole of the kidney was swollen and very firm. On section a comparatively small papillary tumor was found in the upper calyx, which was continuous with an infiltration tumor mass, 6 cm. in diameter, extending through the renal substance to, and in one spot through, the capsule into the perirenal fat. A small abscess cavity with neurotic walls that communicated with the pelvis was present near the center of the tumor. Histologically, the tumor was a characteristic papillary carcinoma of transitional epithelium, but the degree of invasion of the renal parenchyma was unusual. A calculus about 8 mm. in diameter was present in the upper calyx. One of the lymph nodes showed metastasis.

Dr. Benjamin Castleman: Do you think the stone had anything to do with the tumor?

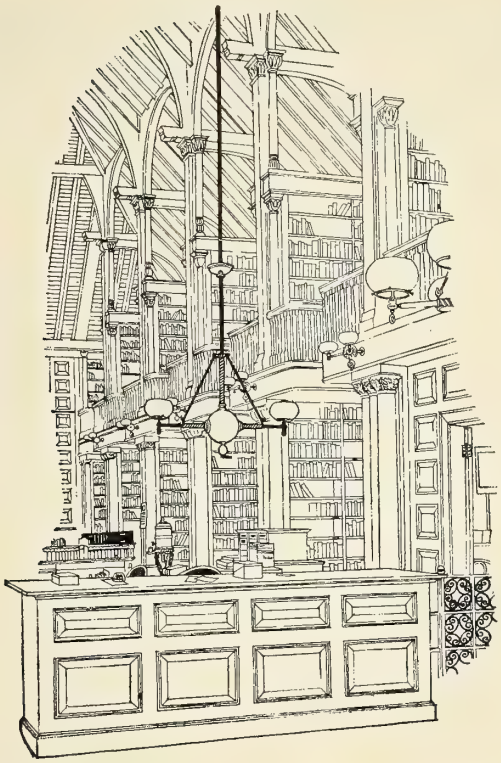
Dr. Mallory: Of course, in the gall bladder there is a very close association between gallstone and cancer. I do not know whether they have any similar relation in the kidney.

Dr. Fletcher H. Colby: I think the greatest concern about stone associated with tumor in the kidney is that the association is more likely if the stone lies within the renal pelvis than in the parenchyma.

Dr. Castleman: We have had 1 case* that I recall in which the patient had numerous stones in the pelvis and calyxes, leukoplakia of the pelvis, foci of carcinoma in situ and a frank squamous cell carcinoma.

*Case records of the Massachusetts General Hospital (Case 30442). New Eng. J. Med. 231:633-636, 1944.

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# THE Secretary's MESSAGE

## AMA IN CHICAGO

LOUIS H. BAUER, M.D. OF HEMSTED, NEW YORK, IN DRAMATIC CEREMONIES IN WHICH HE ASSUMED THE PRESIDENCY OF THE AMERICAN MEDICAL ASSOCIATION DURING ITS 101ST ANNUAL MEETING IN CHICAGO, TUESDAY EVENING, JUNE 10, 1952, AIRED NATIONWIDE OVER ABC AND MUTUAL NETWORKS. DECLARED: "SLOWLY, BUT SURELY, WE ARE LOSING THE FREEDOMS GUARANTEED BY THE BILL OF RIGHTS"; "PERSONAL LIBERTIES ARE BEING TRADED FOR GOVERNMENT SUBSIDIES"; "THE GREAT DECISION—SOCIALISM OR AMERICANISM—MUST BE MADE BY ALL THE PEOPLE."

JOHN W. CLINE, M.D. OF SAN FRANCISCO, IN HIS FAREWELL ADDRESS AS PRESIDENT OF AMA SAID AMERICAN MEDICINE IS "STRONGER, MORE UNIFIED AND BETTER ABLE TO PREVENT THE DESTRUCTION OF THE HIGH STANDARDS OF MEDICAL CARE INEVITABLE IN SOCIALISTIC SCHEMES," AND MEDICINE HAS BECOME A SIGNIFICANT FORCE IN AMERICAN LIFE."

BARRING A REVERSAL IN THE NOVEMBER ELECTIONS AND A STRONG RECURRENCE OF THE THREAT OF SOCIALIZATION, THE COORDINATING COMMITTEE OF AMA NATIONAL EDUCATION CAMPAIGN, ORGANIZED IN 1948, REQUESTS DISSOLUTION BY THE END OF 1952. WHITAKER AND BAXTER, PUBLIC RELATIONS FIRM WHICH DIRECTED THE ACTIVITY, REQUESTS THAT THEY BE RELIEVED OF THEIR RESPONSIBILITIES AT THAT TIME.

PAUL DUDLEY WHITE, M.D. OF BOSTON MASSACHUSETTS, NOTED HEART SPECIALIST, SELECTED BY HOUSE OF DELEGATES AS RECIPIENT OF THE DISTINGUISHED SERVICE AWARD OF AMA FOR 1952.

E. J. McCORMICK, M.D. OF TOLEDO, OHIO, MEMBER OF THE BOARD OF TRUSTEES, VOTED PRESIDENT-ELECT OF AMA OVER F. F. BORZELL, M.D. OF PHILADELPHIA, SPEAKER OF THE HOUSE WHO RELINQUISHED THIS POST AT THE CLOSE OF THE CURRENT SESSION. JAMES R. REULING, M.D. OF BAYSIDE, NEW YORK, ELECTED SPEAKER.

REFERENCE COMMITTEE REPORT ADOPTED RECOMMENDING THAT THE BOARD OF TRUSTEES APPOINT A COMMITTEE TO STUDY AND CONSULT WITH THE AMERICAN OSTEOPATHIC ASSOCIATION REGARDING PERMISSION OF DOCTORS OF MEDICINE TO TEACH IN OSTEOPATHIC SCHOOLS; AND PRESIDENT'S COMMISSION ON THE HEALTH NEEDS OF THE NATION, HEADED BY PAUL B. MAGNUSON, M.D. WHICH UNDOUBTEDLY WILL BE REPORTED ON IN DETAIL BY OUR DELEGATE, MOST CONTROVERSIAL BUSINESS BEFORE HOUSE.

OUR EXECUTIVE SECRETARY ELECTED MEMBER OF THE EXECUTIVE COMMITTEE OF THE MEDICAL SOCIETY EXECUTIVES CONFERENCE.

WOMAN'S AUXILIARY TO THE AMA AGAIN CONTRIBUTES $10,000 TO THE AMERICAN MEDICAL EDUCATION FOUNDATION.

# Editorial

ARIZONA MEDICINE

*Journal of*

ARIZONA MEDICAL ASSOCIATION, INC.

VOL. 9 JULY, 1952 NO. 7

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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.

2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. (See MEDICAL WRITING by Morris Fishbein.)

3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.

4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.

5. Submit manuscript typewritten and double-spaced.

6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.

The Editor is always ready, willing, and happy to help in any way possible.

## PAIN

There is probably no service which the average physician is called on more often to administer than the relief of pain. There is probably no service which is more appreciated by the patient and his loved ones. Certainly the relief of pain sometimes seems more welcome than the actual saving of a life and especially if the patient is having his life saved only to endure more pain. It is especially apropos then to note that the February 1952 issue of The Journal Lancet is devoted entirely to the discussion of pain.

John S. Lundy, M. D. of the Mayo Clinic is the guest editor for this issue and he has assembled a collection of papers on the subject of pain which is really informative and easy to read. A brief mention of some of these papers might be in order.

Dr. Lawrence C. Kolb discusses pain as a psychiatric problem and discusses a number of painful complaints with psychiatric components among which are painful phantom limb, drug dependency or addiction and hysteria. Dr. Eugene T. Leddy of Rochester, discusses the analgesic effect of roentgen rays and mentions that it is probably the method of choice in the relief of pain in acute sinusitis, acute bursitis of the shoulder, pain due to herpes zoster, pain due to psoriatic arthritis and pain due to secondary carcinoma of bone. Dr. Thomas J. Dry has a paper on thoracic pain and cardiovascular disease and includes in his discussion angina pectoris, pain of myocardial ischemia, myocardial infarction, pericardial irritation and disease of the aortic arch. Dr. Edward A. Banner in writing of pelvic pain from the point of view of a gynecologist discusses pain of ovarian origin, of uterine origin and pain originating in the oviducts. Pain-relieving drugs is the subject of the discussion by Dr. Ernest M. Hammes, Jr., of St Paul, Minnesota, and he divides the pain relieving drugs into four classes They are (1) those which act on the organ or tissue producing the pain such as cortisone in rheumatoid arthritis and ergot derivatives in vasodilatory headache; (2) those which act locally to block the conductivity of pain fibers, such as subcutaneous injection of procaine; (3) the true anesthetics which produce unconsciousness and thus relieve the awareness of pain; and (4) the analgesics, which selectively depress the central nervous system without loss of consciousness. Asprin and morphine are members of this last group. The relief of pain in surgical operations and obstetrics is presented by Dr. Ralph T. Knight of Minneapolis, Minnesota and a more detailed discussion

of diagnostic and therapeutic nerve blocks is given by Dr. John W. Pender and Dr. John S. Lundy who is the guest editor. The many possible causes of painful conditions in the upper extremity are well discussed by Dr. Collin S. MacCarty of Rochester, Minnesota. This is a particularly enlightening paper and is well illustrated. The last paper of the group is by Dr. Bayard T. Horton and is concerning histaminic cephalgia.

At Dr. Lundy's request, Dr. Thomas E. Keys of Rochester, Minnesota prepared a list of books and monographs on pain. There are about fifty mentioned on his list. There is also a section of digests from current literature on pain.

It may seem strange that such a detailed report should be given concerning a subject about which so much has already been said. It is our contention that not enough has yet been said. Almost every physician finds himself in a situation, at times, when regardless of how much he knows about pain it is not enough. It is our feeling, therefore, that this February 1952 edition of the Journal Lancet is a valuable edition to the medical literature and it is our hope that every physician will be encouraged to read it.

## BOOK REVIEWS

ANTIBIOTIC THERAPY: By Henry Welch, Ph.D.; Charles N. Lewis, M. D. and Chester S. Keefer, M. D. The Arundel Press, Inc. Washington, D. C. 1951. Price $10.00.

This book fills a long felt need for the compilation of the essential authoritative and up to date information on the antibiotics all in one place for ready and quick reference. The first portion of the book is devoted to a historical sketch concerning the discovery of the various antibiotics and to a brief biographical sketch of their discoverers. The second section of the book deals with each antibiotic individually, giving the indications for its use, the indications for the anitbiotic and the dosage forms. The last section of the book deals with the individual diseases indicating the antibiotics which are most useful in their treatment and giving recommendations for dosage and administration in the light of the most recent knowledge. The antibiotics discussed in detail are tyrothricin, pencillin, streptomycin, dihydrostreptomycin, bacitracin, aureomycin, chloramphenicol, and terramycin. Also brief discussions are given on polymyxin, neomycin, mycomycin, viomycin and subtilin. There is a chapter on miscellaneous considerations of antibiotic therapy and this mentions such things as use of streptomycin and penicillin in the treatment of radiation damage. A very good bibliography is given and the index seems complete.

Surely any physician who has attempted to keep a file of information regarding the antibiotics will welcome this book as a delightful and most useful alternative.

R. L. F.

THE CHANGING YEARS. By Madeline Gray. Doubleday & Company, Inc. Garden City, New York, 1951. Price $2.75.

Every physician who has among his patients women who are in or near menopause will find in this book a means of answering the numerous would have time to give. Furthermore, it is questions which these patients have and answering them in more detail than the physician written in language which the patient can understand since the author is a laywoman, a patient herself. Her research has been careful and tedious and the average physician will find the information she has collected authoritative and reliable. He will find very little with which he can disagree. The attitude is frank, refined and optomistic throughout.

I feel that most physicians will enjoy reading this book and many of them will want to prescribe it for their patients.

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# TOPICS OF *Current Medical* INTEREST

## RX, DX, AND DRS.

By GUILLERMO OSLER, M.D.

TUBERCULOSIS THERAPY.—The Boston meetings of the National Tuberculosis Ass'n. and American Trudeau Society produced a few groans as well as cheers. Caution concerning isoniazid was partly balanced by nods of approval for certain types of surgery. . . . ISONIAZID (the official basic name for isonicotinic acid hydrazide) still produces amazing changes in symptoms of tuberculosis, notable nutritional improvements, and relatively little toxicity. The best (tho scanty) studies on resistance indicate that it occurs, often in 4 to 8 weeks, probably about as often as to streptomycin alone. (The other data on the drug are contained in profuse announcements by several drug companies). The major research will be aimed at finding a drug which will reduce the emergence of resistance to INH. It is known that INH penetrates body cells much better than does SM, and this may be a great eventual help. (Many of the items about this research have already reached print, due to a new gimmick of the American Review of Tuberculosis. Brief papers are published in the 'Notes' section, which can be put thru in 6 weeks instead of 6 months).

Late results from the tried-and-true THORACOPLASTY still show a solid two-thirds 'cured'. (The crippled chests don't show in the statistics, however). EXTRAPLEURAL PNEUMOTHORAX looks better because of the use of antibiotics, the scanty loss of lung function, and the probable future use of plastic sponge as a prosthesis. EXCISION is the glamour op., since the continuing reports show the procedure to be safe, definitive, and followed by more than 90 per cent conversion of infectiousness in certain series. The use of a replacement for lobes is being attempted.

The SANATORIUM was urged as being more necessary than ever for complete therapy. GENERAL HOSPITALS were urged to dash forward from their inertia and diagnose, admit, isolate, and care for patients with tuberculosis; it is a need, and it should be their function.

CORTISONE and ACTH have an unfavorable late or early effect on TB.

COLLAPSE THERAPY IN MENTAL HOSPITALS is being pushed, with permanent methods (thoracoplasty and excision) offering the best results and greatest constancy.

MEDICAL EDUCATION for graduates and undergrads is to be urged and subsidized. Few young physicians will start training as chest specialists unless they have tuberculosis—and fewer have it.

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**The release of ISONIAZID for sale in pharmacies and hospitals occurred on June 5th. . . . Pressure can not be given credit for the release, even tho the drug houses have a fat supply and the public demand has been ravenous. The plain reason is that its toxicity is negligible in therapeutic doses, and the questions of duration of effect, etc., are of no pertinent interest to the F.D.A. . . . This Osler regrets that it had to be done. Thousands of non-specialists will be using the drug widespread. Thousands of patients will receive it at home, evading a complete routine of treatment, remaining as infectious hazards at home, often developing a resistant bacillus, and ending up with a residual lesion which someone must later try to repair. . . . It is possible to use it wisely, but even the specialists who started to give it in January aren't sure how. Said Mowgli. "Look well, oh wolves!"**

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With drugs for tuberculosis being found less than perfect, with a huge series of drugs failing to cure arterial hypertension, peptic ulcer, and the common cold, we'd better not have bad news from the TOOTHPASTE front! The least we can expect is that the CHLOROPHYL stuff will control our halitosis.

The storm over the connection between CHOLESTEROL AND ARTERIOSCLEROSIS is subsiding enough so that one can see several details, says C. F. Wilkinson Jr. of New York. . . . Cholesterol can be manufactured by the body in large amounts. The blood level is affected only by extreme changes of diet except in a few metabolic disorders. Hypercholesterolemia is probably not a cause of atheromatosis. The physical state of cholesterol and other blood lipids seems to be important, as well as the interrelationship. Atheromatosis should be considered an episodic, intermittant, and cumulative disease, occurring (basically) at any age. . . . And, importantly, there is no lab test which can predict the lesion, either present or impending.

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**Drug houses have a strong argument in selling PENICILLIN FOR ORAL USE, other than the one of convenience. . . . Keefer and several others agree that the incidence of side reactions and hypersensitivity is less than from parenteral dosage. . . . With the new unbelievably low cost of the drug per million units (and how easy it is to remember when a million wasn't available in a good sized hospital), one can give it freely by mouth without selling the old homestead.**

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A. M. Smith writes a thoughtful article on enjoyment of old age in The Journal (Michigan). Under the title 'The Best of Life' he concludes that legislators have a long distance to travel before homes for the aged and ill and anxious and dispossessed are really 'homes'. We must try harder

and more constantly to give security and care and happiness to those elders who should be able to have them in the twilight years. . . . He quotes Browning on what the aged should be able to feel,—

Grow old along with me!
The best is yet to be
The last of life, for
Which the first was made.

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**The reluctance of many physicians to push a NEEDLE THRU THE ABDOMINAL WALL into the peritoneal space is not justified by the possible hazard, says C. M. Henry of Georgia. . . . Aspiration for diagnosis, intubation for ascites, insertion of air for diagnosis or therapy all require such a procedure, but the fact is that perforation of a hollow viscus is an almost impossible feat. "One has only to remember that both force and counterpressure are necessary to insert a much finer needle thru the bowel during intestinal suture."**

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The expansion of MEDICAL EDUCATION (to cost 250,000,000 dollars) has been hailed far and wide by the press. It should help solve the medical shortages which have been publicized, but it has a seamy side (all is not as it seems). . . . The increase in 5 years from an enrollment of 23,000 to one of 26,000 sounds easy, and not very large. The difficulty lies in being able to enlarge the classes of an individual school from 75 to 100, or from 100 to 150 students per class. The deans and faculty holler 'murder', especially in states where the legislature commands them to expand and then provides no funds.

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**The story of BLOOD TYPE IDENTIFICATION TAGS, as used in a state which leads in Civil Defense, is interesting. Michigan is about to have more than 800,000 people classified. . . . Several types of tags were devised, and the final tag is a combination of the best features. The tag is of plastic, rectangular, and with a hole in one end for a loop or chain. . . . One side is graphic and simple, with the international blood types in standard colors,—blue for group O, red for B, yellow for A, and white and black for AB. The public insists on this clearcut identification. . . . The reverse side has IBM transcriptions of several pieces of information on certain areas of the tag,— the name, blood type, Rh factor, year of birth, code number (for filing), accession number, and religion. . . . Two per cent of all typings were rechecked to determine accuracy, and an accuracy of 99.26% was found.**

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A paragraph on the BALLISTOCARIOGRAPH appeared here about 2 years ago. It must be updated now. . . . The principles have not changed, but the practice has. The cumbersome table model is now reduced to a small electromagnetic instrument, weighing 20 ounces, which is set up to be attached to the shins. The curves and interpretation are the same. . . . The cost is 35 dollars, and no other equipment is needed—except an electrocardiograph to which it must be attached.

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**An odd approach to therapy has been used in MENIERE'S DISEASE. (This condition is not to be confused with the syndrome). . . . The usual treatment attempts to cure a condition of the vestibule, either unilateral or bilateral. . . . Streptomycin was given in large daily doses (3 grams) with the object of abolishing vestibular function, but without acoustic damage. 'Cold caloric' response was used as the end point. . . . Five of eleven totally incapacitated cases were reported by Hanson (Ann. Otol., Rhin., and Laryng.) to be restored to employment, and the other cases attained comparable results.**

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Korea has provided a fine chance for STUDY OF CHEMOTHERAPY. It has also been a field-day for TERRAMYCIN. . . . Several diseases have been treated with several antibiotics, using rather large groups for each drug. Acute bacillary dysentery was effectively cleared by terramycin, aureomycin, or chloramphenicol, but the first was the best. . . . Acute amebic dysentery was also controlled by all, but terramycin seemed best.

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**One might stretch this column's inclusiveness and tell a SEMI-MEDICAL STORY, heard in Chicago from an officer in the A.U.S. Medical Corps. . . . He had just visited his relatives in the Ozarks, where a man's favorite dog rides beside him on the seat of a pickup truck, and his family rides in back. . . . Uncle Jake's favorite dog seemed to be ill with an intestinal infection. 'Doc' Ficklin, a neighbor with wide repute in such matters, was called in, nodded wisely, measured out two tablespoonsful from a bottle marked 'gasoline', and then watched the critter take off and race around the yard until he dropped exhausted on the ground. When he didn't stir, Jake inquired anxiously as to whether he was in danger. "Nope," said Doc, "just out of gas."**

## PROFESSIONAL BOARD
## 1951-52 Annual Report

During the fiscal year 1951-1952, the Professional Board held two meetings in Phoenix, Arizona; one on October 21, 1951 and the other on March 16, 1952. Dermont W. Melick, M.D., of Phoenix was recently appointed a member for term expiring in 1954, to serve as chairman. In line with recommendation of this Board, Council authorized a membership increase by one for a total of nine, and Elvie B. Jolley, M.D. of Bisbee was likewise appointed a member to serve for term expiring in 1954. With increasing activity and extension of scope of operations, it is the considered judgment of this

Board that a Sub-Committee on General Medical including diabetes, polio, geriatrics, general practice and industrial medicine will greatly facilitate deliberations on these subjects. Activation, thereof, is now in sight.

The Sub-Committee on Mental Health received Council commendation for its outstanding achievement in its undertaking of survey of conditions existing at Arizona State Hospital and submittal of a detailed report of its findings, cognizant of the tremendous amount of work entailed.

The Sub-Committee on Tuberculosis undertook a follow-up survey of all physicians in the state who had pneumothorax equipment in their offices with a view of determining those willing to care for ambulant cases discharged from the sanatorium. Efforts continued in cooperation with various agencies striving to increase the number of beds available for tubercular patients in Arizona on a county and statewide basis.

The Sub-Committee on Cancer has continued its cooperation with and functioned through the American Cancer Society, providing speakers for seminars and lectures, representation on Cancer Clinics and Detection Centers, and all other services including active participation in the administration of both the Service Program and functions of the Society.

The Sub-Committee on Maternal and Child Health continued its study of fetal and maternal mortality within the state and held numerous meetings for the purpose of reviewing voluminous records and statistics relating thereto, with a view of improving the situation through concerted action. With the sanction and approval of this Board, the Sub-Committee plans to expand its membership and act advisory to the Maternal and Child Health Division of the State Department of Public Health. It is anticipated a program of postgraduate education comprising refresher courses will be instituted and made available to all outlying districts within the state in an effort to accomplish a reduction in such mortality. Attention was directed to both the medical profession and the Arizona Hospital Association of the legal requirements governing Serological Tests for syphilis and opthalmia neonatorum procedure.

The Sub-Committee on Venereal Diseases reports the incidence of venereal diseases is definitely on the decline. Presently and for the immediate future, maintaining control is of paramount importance if such favorable progress is to continue. Routine Serological Tests for syphilis on pre-natals, as prescribed by statute, must be enforced and full cooperation of the medical profession to this end is essential. It is recommended that Council again go on record favoring a premarital examination law for this state which action is supported by this Board.

The Sub-Committee on Crippled Children in consultation with the Crippled Children's Section of the State Department of Public Health, established a working agreement with that Division eliminating further charges for medical services. Effective immediately, it shall be the policy of that agency to make one all inclusive per diem charge for institutional convalescent care based on the agency's classification of expenditures used for computing a per diem rate for reimbursement. This rate does not include a charge for medical care. The situation arose due to the increasing number of patients carrying poliomyelitis insurance.

The Sub-Committee on Hard of Hearing reports completion by the Arizona Society for Crippled Children, October 1, 1951, of a five-year survey in hearing conservation. A "testing program" has been established and continues in every county of this state through school or public health nurses or trained volunteer audiometrics. It is noteworthy to mention that trained women of the medical auxiliary of Gila County have undertaken as a project, speech and hearing clinics in its area under Society direction. Similar activity in other county medical auxiliary groups is being encouraged. Medical examinations by otologists in counties where available or general practitioners in outlying districts, as originally planned by the Association and local societies, continues with effective results. Otologists from the metropolitan centers go to the rural areas to examine children, and classes are attended by the local physicians. Effort is being concentrated in the educational follow-up of the children discovered with a hearing loss and are in need of acoutical training in speech correction through diagnostic speech and hearing clinics held in every county during 1951 and 1952. Children in need of acoustical training, the fitting of hearing aids, speech reading and speech correction are referred to one of the summer centers maintained by the Society (one each in Phoenix, Tucson and Flagstaff). A school for the pre-school deaf children, an important

educational medium in the follow-up of hearing conservation, has been developed in Phoenix by the Maricopa County Chapter for Crippled Children. Increased "testing" is desirable and it is the hope that soon there may be established in Phoenix and Tucson, hearing conservation centers possibly associated with the college and university in the respective areas.

The Sub-Committee on Seminars regrettably has had a year of inactivity due to the lack of a chairman. Now that the ranks have been filled it is anticipated that a course will be chartered for future activity.

Establishment of a program of support of qualified Arizona medical students in out-of-state schools by subsidy to such schools, comparable to agreements in effect in other states without medical institutions of learning, was previously recommended by this Board. Council directed its Legislation Committee to give consideration to the problem. It is gratifying to learn that progress has been made to this end and as of this writing the House of Delegates of the Twentieth Legislature of the State of Arizona in the Second Regular Session, effected a due pass on H.B. 266, an act ratifying and approving the compact for western regional cooperation in higher education entered into by the states of Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington and Wyoming, and the territories of Alaska and Hawaii. This is at least the first step forward and it is the hope of this Board that before adjournment of the Legislature and meeting of our House of Delegates in Annual Session, the Senate will have taken similar action and the signature of the Governor will have been affixed thereto, completing its enactment into law.

The Arizona League of Nursing Education and the Arizona State Nurses Association have endeavored to develop a five-year plan for the improvement of nursing services in Arizona. Preliminary surveys have been completed and they now seek the assistance and advice of the medical profession and the Hospital Association in an effort to activate portions of the recommendations previously determined upon. With the support of this Board, Council has appointed a seven-man special committee to participate in further deliberations. It is expected a report of accomplishment will be forthcoming just as soon as the activities of this joint group get underway.

A Health Education Workshop at Arizona State College, Flagstaff, is being scheduled for August 18 through August 29, 1952. Your Board has arranged through the cooperation of the American Medical Association to have a representative of its Bureau of Health Education participate, satisfying request therefor received from the College.

The year has been replete with many miscellaneous problems which have been given thorough study and time consuming deliberation.

In behalf of the members of this Board, we wish to express our appreciation to the members of Council and House of Delegates of this Association for the privilege which was ours in serving the medical profession and the peoples of our state.

Respectfully submitted,
D. W. Melick, M.D.
Chairman — Professional Board

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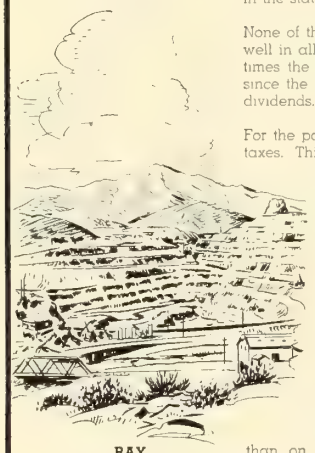
MORENCI

American people have become tax conscious in the past quarter century. Income taxes, sales taxes, gas taxes, social security taxes — many other forms of taxation of which our fathers never dreamed have been added to the old property tax level in the state and counties, and to the various levies of the Federal Government.

None of the taxes has overlooked the mining industry, the industry in Arizona pays well in all levies. Federal taxes have become oppressively serious, and take many times the amount of local taxes. Naturally, this heavy tax load limits operations, since the dollar paid for taxes certainly cannot be paid for payrolls, purchases or dividends.

For the past five years, Arizona's mining industry has paid **$39,929,462.00** in Arizona taxes. This includes state, county, district and city taxes, taxes on property, sales taxes, fuel taxes, state income taxes, unemployment taxes and franchise taxes. For the year 1951 alone, Arizona's mining industry paid **$9,083,596.00** for Arizona taxes.

No other industry in Arizona bears nearly so great a tax load. The mining industry is Arizona's largest taxpayer.

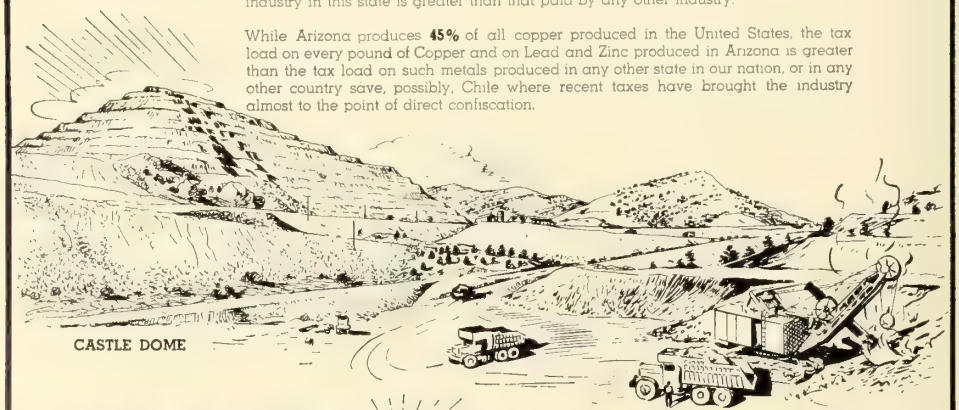


RAY

The valuations of producing mines for property tax purposes are set by the State Tax Commission and, contrary to common practice with respect to valuations on all other types of property in Arizona, they are in most instances **100%** cash value or greater. Arizona's mining industry pays **1%** Production Tax on the value of all metals produced despite the fact that not one dollar's worth of such metals is sold in Arizona.

In addition, the mining industry pays **2%** Sales Tax on all its purchases in the state. The State Income Tax on Arizona's mining industry is greater than on any other industry. Unemployment Insurance Tax paid by the mining industry in this state is greater than that paid by any other industry.

While Arizona produces **45%** of all copper produced in the United States, the tax load on every pound of Copper and on Lead and Zinc produced in Arizona is greater than the tax load on such metals produced in any other state in our nation, or in any other country save, possibly, Chile where recent taxes have brought the industry almost to the point of direct confiscation.



CASTLE DOME

# ARIZONA MINING INDUSTRY

**Arizona Small Mine Operators Association,** 60 Councils in 11 Arizona counties, 3800 members; **American Smelting & Refining Company,** Hayden, Patagonia and Silverbell; **Bagdad Copper Corporation,** Hillside; **Castle Dome Copper Company,** Miami; **Copper Cities Mining Company,** Miami; **Eagle Picher Mining & Smelting Company,** Sahuarita; **Inspiration Consolidated Copper Company,** Inspiration; **Kennecott Copper Corporation, Ray Mine,** Ray; **Magma Copper Company,** Superior; **Phelps Dodge Corporation,** Bisbee, Douglas, Ajo, Morenci, Jerome; **Sam Knight Mining Lease,** Christmas; **Shattuck Denn Mining Corporation, Iron King Mine,** Humboldt; **St. Anthony Mining & Development Company,** Tiger.

## AMERICAN COLLEGE OF ALLERGISTS

PITTSBURG, PA. — Many allergic patients who, even as they seek relief, suffer severe reactions from pollen, mold and dust injection treatments, need no longer do so, according to Dr. N. E. Silbert, who spoke here today at the Eighth Annual Congress of the American College of Allergists.

Dr. Silbert, Chief of Allergy at Captain John Adams Hospital, Chelsea, Mass., said that the answer was an antihistamine, Chlor-Trimeton maleate. When combined with the injectable protein required for an allergy sufferer, this drug, he said, minimizes unfavorable side reactions in almost all cases. Thus, it enables the patient to tolerate high doses of the remedial protein (such as pollen extract), with the result that he can build up a far greater defense against the cause of his particular allergy than ever before.

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# Woman's Auxiliary

## CONVENTION REPORT OF THE PRESIDENT

Mrs. Royal Rudolph 1951-52

"A Way of Life," an address which was delivered to a Yale graduating class by the famous physician, Sir William Osler, impressed me years ago and impresses me more each time I read it. In it, he says, "The load of tomorrow, added to that of yesterday, carried today makes the strongest falter." His advice is, "Our main business is not to see what lies dimly at a distance but to do what lies clearly at hand. Life is a habit of day-tight compartments."

The living of this philosophy, if one may call it that, can mean, I think, broader usefulness and greater efficiency especially for us as members of the Medical Auxiliary. Never before has it been so necessary to shut out the apprehension of the future, the regrets of the past, and concentrate on the immediate need of service to a distressed world. That is what I would emphasize: that the more complex demands of today require a fuller, more concentrated form of service, which, I feel, our Auxiliary now stands ready to offer. It has been a matter of growth, day by day. I remember this organization twenty-five years ago when we were merely groups of doctors' wives meeting together in order to get better acquainted, helping with the various charities of our communities and, if you recall, paving the way for the gratifying sale of *Today's Health* by earnestly selling copies of the old *Hygeia*. Later, as we came to assume a more definite identity, we were called on to assist the Medical Association at conventions and to aid in promoting legislative measures approved by the profession. It is good to know we were ready and efficient as we dealt with what were then the immediate issues.

Today, times are different from the situation of twenty-five years ago, and the emergencies we have to meet were then undreamed of. But, if we are to keep pace, we must still crowd into our "day-tight compartments" that same readiness to serve and serve intelligently in capacities for which we as doctors' wives are particularly equipped. The threat of the freedom of enterprise which contronts every good American citizen bears a special threat, as you know, to the American Medical Association. Two years ago the Association launched the National Educational Campaign to preserve the American system of medicine. Although it has been attacked again and again by the advocates of Compulsory Health Insurance, it has steadily perserved until now the American public is coming to see that the medical profession is fighting for the health of the nation and the principle of scientific freedom which has made this country the world leader in medical progress.

In this campaign we are playing our part. The Medical Association openly recognizes that it is the members of the Women's Auxiliary, working at the grass roots, who have been greatly responsible for getting the true facts before the public. This is indeed a matter which "lies clearly at hand." So long as the wounded in Korea rely for aid upon those very measures for which we have worked so hard, we must remain vigilant.

From the reports, members in Arizona should feel proud of the past year's accomplishments:

1. Three new counties have been organized and membership increased.
2. Radio Health Education Program was promoted in 4 counties.
3. Nurse Recruitment was sponsored in 6 counties.
4. Nurse's Loan Committee gave financial aid to 3 girls.
5. Organized counties assisted 18 agencies financially or by volunteers.
6. Legislative Program disseminated much information to members.
7. *Today's Health* and *Bulletin* reported increased sales.
8. Articles in*Arizona Medicine* informed members of current medical topics.
9. Civil Defense chairman stood ready to aid communities.
10. A $50 gift was given to the American Medical Education Fund.

This is a magnificent program, but in the march of events we cannot rest upon our laurels. Our present contributions should be a spur to still fuller and richer contribution. We can

make it provided every member shapes her "way of life" to include her particular share, rather than let so few do so much. I realize only too well that our working months in Arizona are fewer than in some states; also, there are fewer women to assist many organizations. But that is all the more reason for us to remember the Auxiliary has only us, you and me, the doctor's wife, on whom to depend to carry out its program.

Before making my two suggestions for next year, which are not exactly new, I wish to call your attention to the fact that more and better material is continually being designed to help present the case of medicine to four important women's organizations whose endorsement is not yet on record. These groups are:

American Association of University Women
American Congress of Parent Teachers
League of Women Voters
Nurses' Association.

Gaining their approval is a major objective, and the combined help of the Women's Auxiliary is needed.

Because we now have an increased and better-informed membership, I feel that we can continue the work of the past year with even greater success, but I would like to recommend that we again include in our program the following:

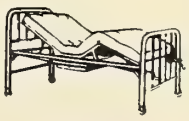
1. Get the public schools to institute an essay contest, "Why We Should Preserve the Voluntary System of Medical Care in the United States," to stimulate the interest of pupils, parents and teachers in this issue.
2. Present information to the lay public by developing a Speaker's Bureau. The Auxiliary has women who have the ability to tell the story to local groups. Eventually this would affect the thinking of the community and lead to endorsement by national organizations.

These two suggestions, it has seemed to me are pertinent to the need that "lies closely at hand." Let us then follow Dr. Osler's philosophy and not clutter our lives with unimportant things. This year stands out as a very critical year in the welfare of our country. Can you think of anything more important now than to form the habit of including the work of the Medical Auxiliary in your "day-tight compartment"?

In closing, I wish to thank the officers, committee chairman, county presidents and all members of the Auxiliary for their loyalty and time so generously given and for the many courtesies extended to me during my visits to the counties. I have greatly enjoyed my term as president and feel my life has been happily enriched by pleasant memories of my association with all of you. I also wish to express my appreciation to the chairmen of this splendid convention, to the members of Maricopa County who helped to make it a success and to those who assisted with the art exhibit.

You are to have a new president, Mrs. Schoffman, who is prepared to be your guiding force. I hope you catch her earnestness and enthusiasm and that you will give her the loyal support that I have enjoyed. Success to you in 1952-53.

Respectfully submitted
Mrs. Royal Rudolph
Tucson, Arizona

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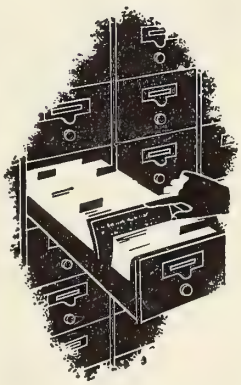
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If the concept of an ideal dietary supplement could be formulated, it might well be one that provides qualitatively every substance of moment in human nutrition. It would provide those for which human daily needs are established as well as others which are considered of value, though their roles and quantitative requirements remain unknown.

How Ovaltine in milk approaches this concept, and how well the recommended three glassfuls daily augment the nutritional intake, is shown in the appended table. The two forms of Ovaltine available—plain and chocolate flavored—are closely alike in their nutrient values.

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(Each serving made of ½ oz. of Ovaltine and 8 fl. oz. of whole milk)

| MINERALS | | VITAMINS | |
|---|---|---|---|
| *CALCIUM | 1.12 Gm. | *ASCORBIC ACID | 37 mg. |
| CHLORINE | 900 mg. | BIOTIN | 0.03 mg. |
| COBALT | 0.006 mg. | CHOLINE | 200 mg. |
| *COPPER | 0.7 mg. | FOLIC ACID | 0.05 mg. |
| FLUORINE | 3.0 mg. | *NIACIN | 6.7 mg. |
| *IODINE | 0.7 mg. | PANTOTHENIC ACID | 3.0 mg. |
| *IRON | 12 mg. | PYRIDOXINE | 0.6 mg. |
| MAGNESIUM | 120 mg. | *RIBOFLAVIN | 2.0 mg. |
| MANGANESE | 0.4 mg. | *THIAMINE | 1.2 mg. |
| *PHOSPHORUS | 940 mg. | *VITAMIN A | 3200 I.U. |
| POTASSIUM | 1300 mg. | VITAMIN $B_{12}$ | 0.005 mg. |
| SODIUM | 560 mg. | *VITAMIN D | 420 I.U |
| ZINC | 2.6 mg. | | |

| | |
|---|---|
| *PROTEIN (biologically complete) | 32 Gm. |
| *CARBOHYDRATE | 65 Gm. |
| *FAT | 30 Gm. |

*Nutrients for which daily dietary allowances are recommended by the National Research Council.

# ARIZONA MEDICINE

*Journal of* ARIZONA MEDICAL ASSOCIATION

VOL. 9, NO. 8 AUGUST, 1952


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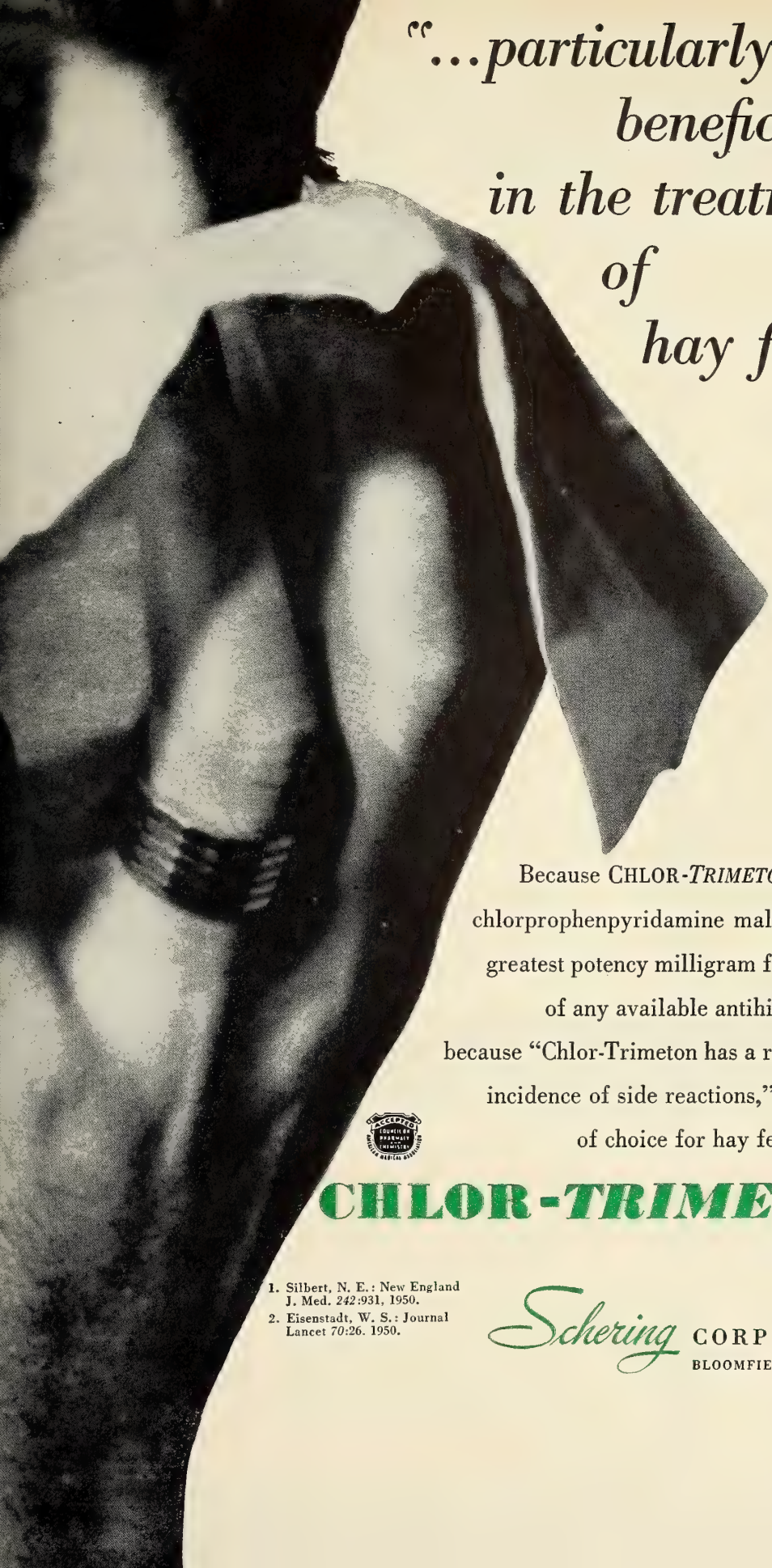
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1. Silbert, N. E.: New England J. Med. 242:931, 1950.
2. Eisenstadt, W. S.: Journal Lancet 70:26. 1950.

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# URINARY TRACT

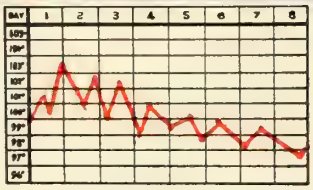
## *Pyelonephritis*

**1** Pyelonephritis occurs most often in the young child . . .



commonest in the "diaper-age" female

**2** The onset is sudden, usually with a chill . . .




. . . temperature—"spiking"



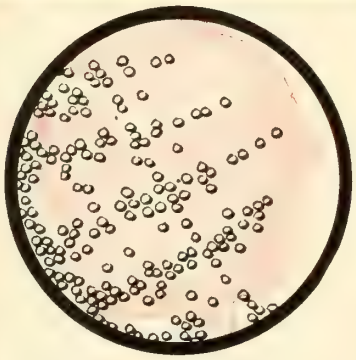
. . . white cell count—high

**3** Always, pus cells and bacteri pear in the urine



look for *clumps* of white cells in *catheterized* specimens

**4** Culture determines pathogen. Mixed infection not uncommon.

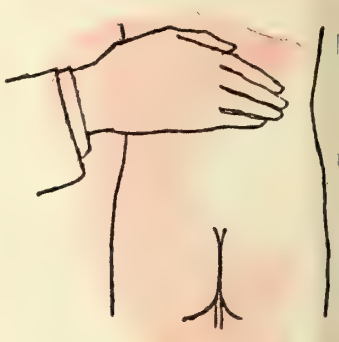


in 8 out of 10 children, colon bacillus invades

**5** Sometimes there is tenderness over the kidney region . . .



try the McKnight punch, or



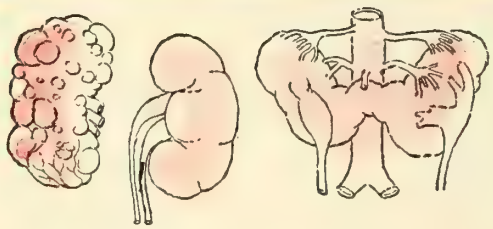
palpation in C-V angl

**6** . . . or abdominal pain and rigidity



suggestive of an acute abdomen

**7** Look for a cause of urinary stasis.





in children, 75% have congenital malformation . . . others may have calculus, foreign body, neoplasm, ureteral spasm.

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as well as other infections
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*Chronic asthmatic*

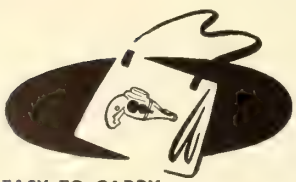
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1. Kaufman, R., and Farmer, L. (1951), Norisodrine by Aerohalor in Asthma, Ann. Allergy, 9:89, January-February. 2. Swartz, H. (1950), Norisodrine Sulphate (25 Per Cent) Dust Inhalation in Severe Asthma, Ann. Allergy, 8:488, July-August. 3. Krasno, L., Grossman, M., and Ivy, A. (1949), The Inhalation of 1-(3',4'-Dihydroxyphenyl)-2-Isopropylaminoethanol (Norisodrine Sulfate Dust), J. Allergy, 20:111, March.

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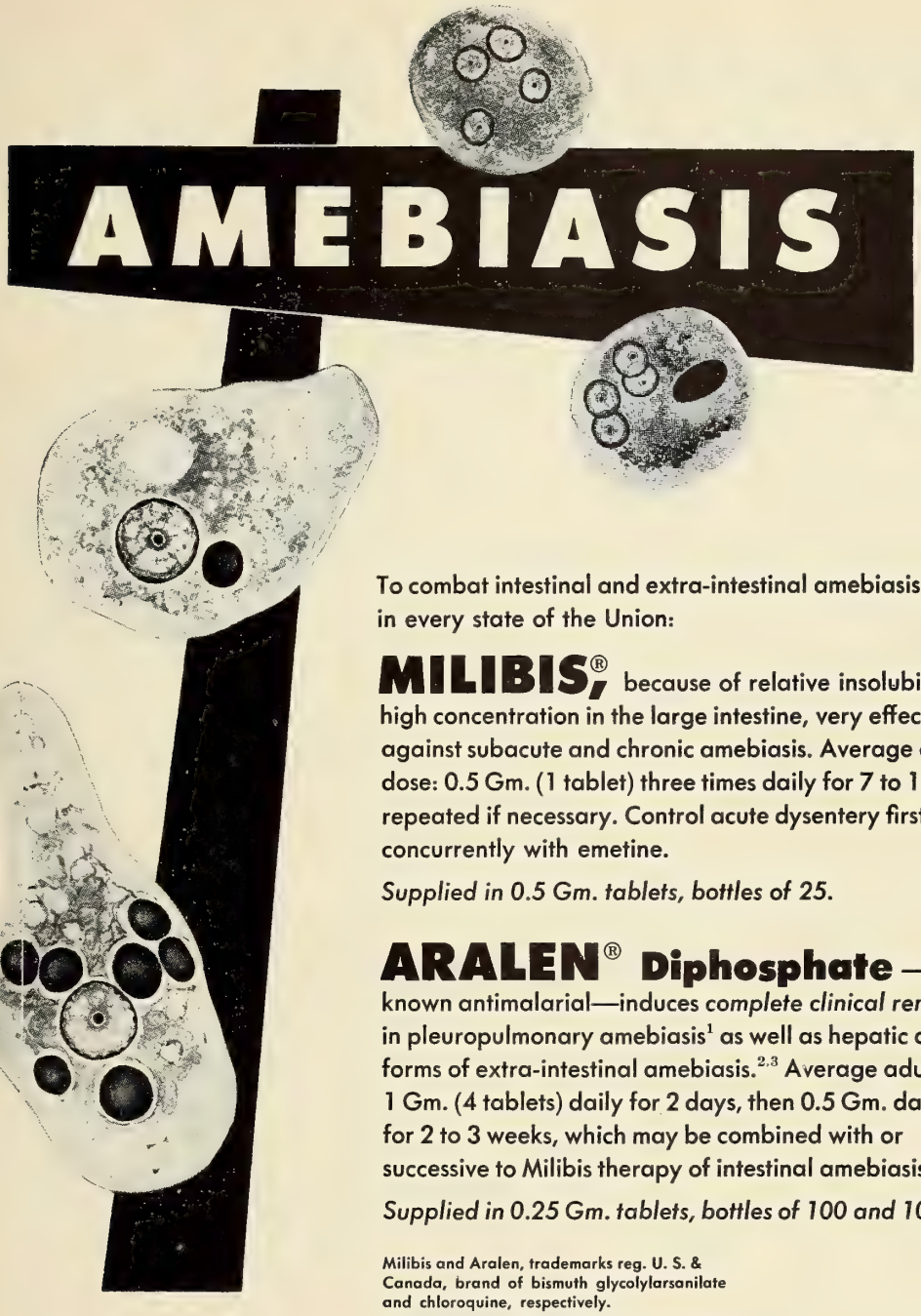
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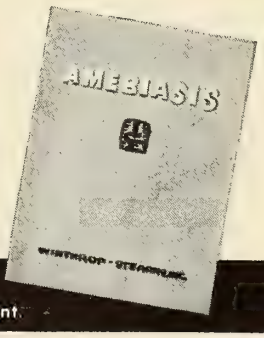
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1. Lindsay, A. E., Gossard, W. H., and Chapman, J. S.: *Dis. Chest*, 20:533, Nov., 1951.
2. Conan, N. J., Jr.: *Am. Jour. Med.*, 6:309, Mar., 1949.
3. Emmett, J.: *J.A.M.A.*, 141:22, Sept. 3, 1949.

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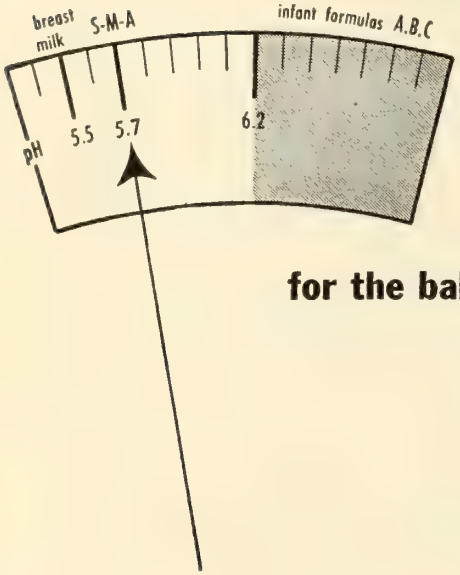

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**2** *Lower incidence of constipation.* Formation of calcium soaps is inhibited; acid produced by fermentation stimulates peristalsis.

**3** *Lessened susceptibility to diarrhea.* Lactobacilli inhibit overgrowth of 'colon' group bacilli.

**4** *A stool typical of the breast-fed infant*—having a "buttermilk-like", rather than putrefactive odor.

**5** *Vitamins more readily available, especially vitamin* $B_{12}$. Growth of putrefactive organisms which reduce amounts of vitamins available[2] is inhibited.

**6** *Minimal danger of perianal dermatitis and diaper rash in the new-born.*[3]

REFERENCES

1. Barbero, G.J., Runge, G., Fischer, D., Crawford, M.N., Torres, F. E., and Gyorgy, P.: J. Pediat. *40*:152 (Feb.) 1952.
2. Watson, J.: Gordon Research Conf. Vitamins and Metabolism, 1950.
3. Torres, F.E., Romans, I.B., and Wheller, J.B.: A Study of Infantile Diaper Rash. To be published.

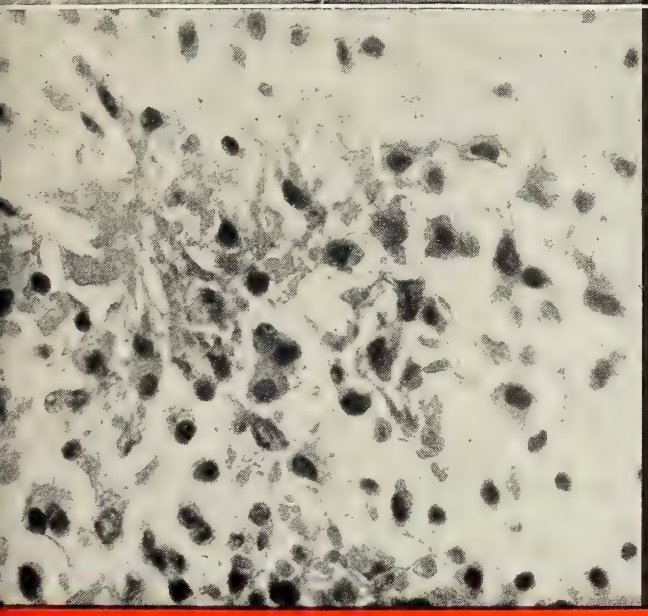
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**a.** Early cortisone administration suppresses and in some cases may even prevent serious cardiac damage.



**q.** What effect does cortisone have on acute rheumatic fever?

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ARIZONA MEDICINE
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# Original ARTICLES

## NEW METHOD OF COMMUNICATION FOR THE APHASIC PATIENT

Hyman Goldstein, M.D., Sc.D.; Hamilton Cameron, M.D., Ph.D.
New York City, N. Y.

The paralytic individual who is stricken with hemiplegia, spastic paraplegia or other pathological condition with cerebral involvement in which complete aphasia grips him with a more or less transient period of unconsciousness, becomes more and more frightened and panicky, especially, when the mental cloud begins to clear. He feels the sinking state of helplessness and loneliness he is precipitated into, while at the same time he retains his thinking apparatus and auditory sense within an inert body with immobile extremities, save one side or one upper extremity which is usually normal, because of his inability to communicate and express himself to make his needs known to others.

For the hemiplegic, bulbar paralysis and other types of cerebral lesions, wherein the tongue feels thick and numb, the pharyngeal muscles and the delicate small laryngeal muscles are involved, the paralysis of which leads to defects of speech articulation which is responsible for the production of unintelligible language and speech. Sensory disturbances of central nervous origin is also involved in most cases with the end result of total aphasia. It does not matter whether the etiology is one of cerebral hemorrhage, embolism, thrombosis, abscess, tumor, or part of multiple sclerosis, progressive lenticular degeneration (Wilson's disease), syphilitic paresis, meningitis and meningo-encephalitis, or, a post-encephalitic cortical lesion with cerebral spastic states we so often see in children, as after an attack of measles, mumps, pertussis, influenza, pneumonia, and other virus and bacterial infections complicated by cerebral palsy and aphasia. The paralytic patient lies in bed helpless, panicky and distraught with fear he will never again be able to speak, regain normal functioning muscles nor be able to communicate with others and feels tragically alone, a shut-in so to speak.

One of the authors, Dr. Hamilton Cameron during the night of January 14th, 1943 entered a hospital for a physical check-up, and at the same time take a much needed rest after a long stretch of hard work. During that night he suffered an attack of hemiphlegia, transient short period of unconsciousness and total aphasia. This was the result of a cerebral embolism following an attack of coronary thrombosis. The unconscious state was fleeting in character. When he returned to consciousness, clear thinking and intact hearing sense, he suffered most because of his complete aphasia. He expressed it best by saying, "I was imprisoned in a dead body, the pain of which held me, tortured me, the paralysis that encased my limbs and closed fast my throat was nothing compared to the terror that seized my mind." "I could not speak and I wanted many things but could not make myself understood. I was a shut-in within a paralyzed body and, a shut-out from the world outside." Unquote, every aphasic patient has a similar experience of sadness and hopelessness. Dr. Cameron kept thinking while lying in his sick-bed, repeating to himself mumbling over and over again, there must be someway I can make myself understood. Then began the birth of a new hand-sign-language. He put his healthy left upper extremity especially the hand and

fingers to work. And also every attendant and friend at the hospital at work. At first everyone thought he was developing some sort of psychosis because of his mumbling and moving his fingers and hand in every direction. But little by little it dawned upon them that the sick doctor has developed a new language of communication for the paralyzed. And the "Hand Talking Chart" was the end-product. Through a period of months he devised the following:

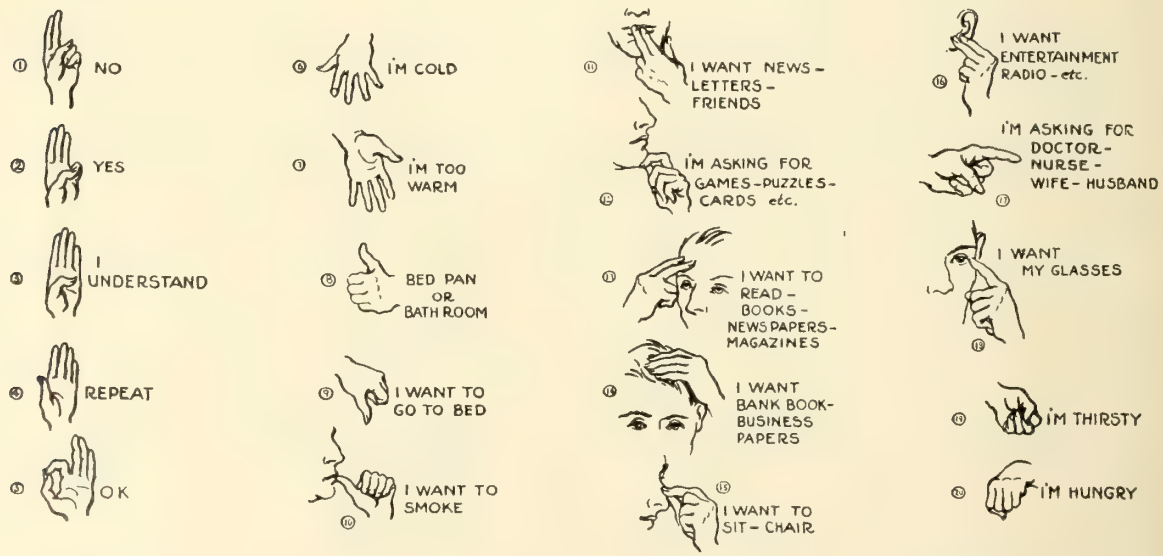
Using the hand and fingers of the good extremity to make the signs on the above chart. The panicky feel gradually left Dr. Cameron, and he felt much relief and a great joy from his discovery. He felt now, he had a plan with which he could help other so-called shut-ins. Bringing the same aid enabling other paralytics to communicate their needs during an aphasic period gave him great comfort. He would say, "It was I whose courage had to be lifted. And as though God were at my bed-side, across my pain racked mind came this message from the Bible: (Be ye transformed by the renewing of your mind)—Romans, 12: 2. This gave him power, hope and faith and acted as a guide to go on. Even though his condition was bad, his new stamina and new communication language hand chart helped him rehabilitate himself and, regain his speech and also the use of his paralyzed muscles sooner than what could be possible otherwise.

### *New Method of Communication and the Hand Talking Chart For Aphasia*

It is a well known fact that to train a muscle we must supply work for it, gradually increasing it in the course of training to rehabilitate it to function normally. This is true for the mental processes, and also, in the rehabilitation of the aphasic to coherent speech. The "Hand Talking Chart" is very easy to master, both, for the patient at any age from that of a young child to that of an adult, and also, by the doctor, nurse, attendant, or a member of the patient's family or friends placed in charge to care for him. The attendant of the Aphasic patient memorizes the signs on the chart, their meanings, and significance so that it becomes easier for him to demonstrate the Hand Talking Chart to his patient. The Aphasic individual even though he is paralyzed, he usually has one normal extremity free (upper right or left), which he can train to make the fingers and hand signs indicated on the chart. He could practice making the proper fingers and hand movements knowing their different meanings, many times over and over again, until he perfects

**HAND TALKING CHART**

**The sign language in the designs speaks for itself. The figures and letters across the bottom are independent of the designs. By pointing with pencil or finger to the letters or figures needed to further a conversation, communication between patient and friend can be amplified even to the "dictation" of a letter by the patient who otherwise would remain completely inarticulate.**




Revised
Second Edition

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Hamilton Cameron, M.D.

his knowledge of them. Slowly, yet understandingly he masters this new language and uses it daily until he regains the use of his own speech, and in time use of his failing muscles. This is true for many paralytics especially those afflicted with cerebral thrombosis and embolism.

*The Chart Study*

The Aphasic paralytic can make himself understood by straightening two fingers upward for NO, three fingers upward for YES, four fingers upward and thumb in for UNDERSTAND, and so following the *chart signs* he can communicate the words REPEAT, O.K., I'M COLD, I'M TOO WARM, BED-PAN or BATHROOM, I WANT TO GO TO BED, I WANT TO SMOKE, I WANT NEWS, LETTERS AND FRIENDS, I'M ASKING FOR GAMES, PUZZLES, CARDS ETC., I WANT TO READ BOOKS, NEWSPAPERS, MAGAZINES, I WAN BANK BOOKS, BUSINESS PAPERS, I WANT TO SIT IN CHAIR, I WANT ENTERTAINMENT AND RADIO, I'M ASKING FOR DOCTOR, NURSE, WIFE, HUSBAND, I WANT MY GLASSES, I'M THIRSTY, AND I'M HUNGRY. Mastering these words and phrases the paralytic can be made quite comfortable. The chart can be looked at by the patient when he can see, if need be he can use his glasses, and make it easier for the Attendant and himself in using the hand talking chart. Chart slides can be projected upon a screen in teaching those who have poor eye-sight and need additional help to aid them, besides the use of their glasses. Large charts can be used instead of the regulated size. All methods applied having one aim in view, to train the aphasic patient how to be able to communicate his wants to his Attendants and obtain those comforts. It facilitates also his recovery, more rapidly. It's up to the intelligent and sympathetic Attendant to take the patient's good hand and fingers and demonstrate every sign slowly and carefully, and repeating these signs often, giving them their proper meaning, until the aphasic patient masters the Hand Talking Chart and enjoys its use of communication. The patient begins to lose his fear and regains a desire to get well by helping himself practicing speech articulation and expression, and also retraining and reeducating his paralyzed muscles to move again in normal paths.

This new method of communication for the aphasic patient, in our experience and in the experience of others whose names I will mention later in the article, has made the patients very happy, giving to them a new reality, in enjoying life comforts by making themselves understood, and it also made their families and friends happy. P. Yakovlev, quoted by Dr. Clemens E. Benda in his recent book, "Developmental Disorders of Mentation and Cerebral Palsies, on page 283, 1952, Grune and Stratton," pointed out that speech development goes through a stage of speech as a means of expression to a means of communication. The former stage depends primarily on motor facilities which may be damaged. The latter stage depends on a higher level of mental integration and intactness of the nervous system which may be damaged at any place. The aphasic cerebral palsied child frequently impresses parents and observers as a child who understands everything, but who cannot talk. The "Hand Talking Chart" is ideal in such children when resorted to by patient, doctor, nurse and attendant.

While one of the Authors H. C., was recuperating from his cerebral accident, at the Manhattan General Hospital of New York City, he was given a three year Residency at the hospital by its Medical Director, Dr. Alfred A. Richman to whom Dr. Cameron feels grateful and appreciative for having been given this opportunity to carry out his experiments, research as well as his self-treatment. His secretary, Miss Ida Teitelbaum, Ph.D., during this research period of his Residency was of great material aid in writing and recording the various observations that led up to the completion of the Hand Talking Chart and its clinical usage and effects in improving the aphasic patients. Her work entailed a voluminous amount of writing and details of research data by the authors throughout several years of observations. We feel greatly indebted to her for her untiring efforts and devotion to this work.

Since the completion and clinical use of the "Cameron" Hand Talking Chart, many reports came to us from Hospital Staffs, and Supervising Nurses teaching Nurse's pupils, who are using these charts to retain the asphasic patient to enable him, to make his wants known to others, and, receive proper attention and comfort through this means of training. It helped also to quicken or hasten the period of speech recovery.

The clinical reports came to us from Irwin D. Stein, M.D., Executive Director, in charge of Occupational Therapy, Montefiore Hospital for Chronic Diseases of New York City who wrote, "We have found your Chart very useful in the retraining of the aphasic patient." Unquote, there had been short explanatory descriptions of the "Hand Talking Chart" in the American Journal of Nursing during July, 1951. Also in Modern Medicine, and Medical Times, November, 1950, Nursing World, Aug., 1950 and Journal of Living, July, 1949 in which the author offered to send "Hand Talking Charts" gratis to all Doctors and Nurses taking care of aphasic patients. The same practise will be maintained to send as many charts as will be necessary to a hospital, institution, or home, to treat aphasic patients under medical care if the Doctor or Nurse in Charge, will mail such requests to us. We will welcome postage rate to cover the mail which is usually 3 to 10 cents, but no costs for the charts.

Dr. L. G. Frith and Gladys D. Frith, M.D., of South Bend, Indiana wrote on April 22nd, 1952, "I have used the Visual hand signs you devised for several months. Each patient has been frank and outspoken in appreciation for them. You have certainly relieved a very trying experience for all of us." Arthur M. Hoffman, M.D. of Los Angeles, Cal., wrote, "At the Santa Fe Railroad Hospital where we have many old patients on whom it can be used, I have found that blowing it up into a card about 1 x 2 feet has greatly facilitated our instructions to these patients." Robert S. Flinn, M.D., of Phoenix, Arizona, wrote, "I have had an opportunity to use it on one patient only and it was quite effective. Happily, however, the patient soon regained his speech." Mrs. Anna Amann, R.N., Director, Bureau of Public Health Nursing, City of New Orleans, Health Dept., States, "Our Staff has used to good advantage the hand talking charts which you so kindly sent us sometime ago." This letter was dated March 11th, 1952.

William K. Keller, M.D., Professor of Psychiatry at Louisville General Hospital, Louisville, Kentucky, states, In a letter March 7th, 1952, "I am completely sold on this method of communication and I have successfully used it in those cases where it was applicable. It is very simple and yet fills a very profound need. I find that it is applicable by Residents who can, with very great ease, quickly teach patients to communicate by this means. It is a very worthwhile contribution." Dr. J. M. Barnes of Montgomery, Alabama, wrote, "I have used your "Hand Talking Chart" with considerable success in a few cases of aphasia." Dr. Walter B. Phillips, of Cincinnati, Ohio, wrote, "I have used the "Hand Talking Chart" on three patients and found it very satisfactory. It has proved a relief for them from obvious distress. It is a grateful mode of communication." Dr. Hilton S. Read of the Ventnor Clinic, Atlantic City, N. J., wrote April 16th, 1952, "I am quite sure that patients who can use this chart are most appreciative. Nothing is more pathetic than the individual who cannot communicate his thoughts to his family and his associates." Dr. Myron J. Welty, Leighton Clinic, Leighton, Alabama, wrote April 16th, 1952, "I am glad to tell you that I have had excellent results with the hand talking chart in a case of strictly aphasic hemiplegia, that I have had since you sent me the chart. It was very helpful and encouraging to the patient and his attending relatives alike, and they appreciated it highly. I wish to thank you for them and myself, and can surely recommend its use in this type of cases." Stewart H. Jones, M.D., Lahey Clinic, Boston, Mass., wrote 3/31/52, "It does seem like a practical solution to the problem of the aphasic patient." Eben Alexander, Jr., M.D., Wake Forest College, The Bowman Gray School of Medicine, Winston-Salem, North Carolina, wrote 3/25/52, "I do feel it is a useful method of communication for certain selected cases, and we will continue to make use of it as patients present themselves for it." W. G. Walker, M.D. wrote 4/16/52, "Proved very helpful and comforting." Mary Jane Williams, R.N., Instructor, Medical Nursing, Yale University School of Nursing, New Haven, Conn., wrote Oct. 13th, 1950, "The Chart is an excellent idea and feel that we, as nurses, should be able to utilize it to advantage in our rehabilitation unit. 40 copies sent for the nursing unit." Clifford D. Moore, M.D., Medical Director, Stanford Hall, Stanford, Conn., wrote 3/12/52, "The Chart appeals to me as a useful aid in dealing with aphasics."

We feel encouraged by receiving hundreds of such favorable reports of the use of the hand talking charts successfully upon several

hundred aphasia patients, over an extended area of a cross-section of this country, with experiences similar to our own, wherein, the patients were able to communicate with others their basic needs and desires, thereby dispelling their fears, and helping them on to a speedier recovery making everyone around happier.

Direct requests for "Hand Talking Chart," to Dr. Hamilton Cameron, Apt 3LL, 601 Cathedral Parkway, New York City 25, N. Y.

## LIPOPROTEINS AND ATHEROSCLEROSIS

Benson Bloom, M.D.
Tucson, Arizona

In recent years it has become increasingly apparent that atherosclerosis, the most important and most common type of arteriosclerosis, is a disturbance of metabolism of lipids, rather than being merely an inevitable consequence of the ageing process. Years ago, Anitschow(1) was able to produce lesions in rabbits that closely simulated human atherosclerosis by feeding large amounts of cholesterol, a substance foreign to the usual rabbit diet. It was furthermore demonstrated that by withdrawing the cholesterol the lesions could heal, leaving a hyaline scar. Because so many people refused to accept this possible similarity between rabbits and human beings, the work of Anitschow has not received the praise it deserved. Since that time, other workers, using other species, have shown clearly that atherosclerosis can be produced with ease in some animals, (and can be modified, incidentally, by various hormones, particularly in the chicken). On the other hand, dogs are not susceptible to atherosclerosis, unless made myxedematous by thiouracil. There are differences in localization of the lesions in these animals as contrasted with the lesions as found in man, but the microscopic picture is essentially the same, and it thus appears that animal studies can be of great help in elucidating the complex set of circumstances that determine atherogenesis.

There are many observations too, that make it perfectly clear that there must be a number of circumstances that determine the degree of atherosclerosis a human being will develop. We know that it is rare for a woman in her forties, without hypertension or diabetes or myxedema, to have a coronary thrombosis, and yet this is not at all an uncommon occurrence in men. There is, thus, a sex difference. Army pathologists report that the native population of Okinawa shows much less atherosclerosis than Americans. This may be racial or it may be dietary. During the German occupation of Norway, when the butter and the fats were taken over by the Germans, there was, according to Dedichen(2), a sharp reduction in the incidence of coronary thrombosis among the Norwegian population, the incidence of this disease returning to its previous level shortly after the war was over. It was noted, too,(3) that American soldiers had a higher incidence of coronary disease than the British soldiers fighting under the same circumstances, this higher incidence in Americans being ascribed to their more luxurious diet, especially with regard to fats. It is said, too, that in Germany after World War II, coronary disease decreased during the period of partial starvation. How accurate these observations are I cannot say, but they strongly suggest that dietary factors are important in atherogenesis. For a number of years this has been the suspicion of many workers in the field, but there never has been any proof, and especially so since the only serum tests for atherosclerosis were by determining blood cholesterol levels and phospholipid/cholesterol ratios. The results of these tests have so far led to a great deal of confusion, the cause of which is now apparent.

In February of 1950, Gofman, working at the Radiation Laboratory at the University of California, reported(4) on his discovery, by use of the ultracentrifuge, of large lipoprotein molecules in the blood serum of patients with atherosclerosis. This work has resulted in considerable increase in the interest in the problem, and since then there have been numerous reports dealing with these so-called "Giant Molecules" of the Sf10-20 class.(5, 6, 7, 8) In brief, Gofman has shown that an abnormal class of molecules is present in the serum of people who are developing atherosclerosis, or at least that these molecules are present in such people to an abnormal degree. At present it is felt that the critical level of concentration of these molecules is around 50 or 60 mg. per cent. In other words, almost invariably those people who develop coronary occlusion have had blood levels of

these lipoproteins at these heights, and many coronary cases have levels up to 80 or 100 or more. Assuming the correctness of these studies, and I have no reason to doubt them, we thus have a means at hand to determine, by a serum study, the individual who is undergoing the process of developing atherosclerosis, and therefore possibly its very common sequel, coronary disease. At present a study is in process on about ten thousand people to determine whether coronary thrombosis will develop only in those people whose blood levels of these lipoproteins are elevated. You can readily imagine that this is a rather stupendous undertaking. So far, it appears that all the people who have developed coronary thrombosis (with one possible exception) have significantly elevated Sf10-20 levels. Within the next year or two, we should know with greater accuracy the value of this test. It also appears clear that the results from these studies so far are in complete accord with all our present knowledge of atherosclerosis. For example, the elevated levels are found more commonly in diabetics, hypertensives, the myxedematous, the nephrotics and cases of xanthoma tuberosum, all conditions where we know that atherosclerosis is prone to occur.

Gofman was able, furthermore, to demonstrate that, in some people, but not all, these elevated lipoprotein levels could be reduced by strict adherence to a low fat-low cholesterol diet. The diet is somewhat difficult to follow, and I doubt if the average American would follow it unless he were threatened with a repeat coronary occlusion. The fat intake must be reduced to 50 or even 25 grams of fat, and the cholesterol intake must be markedly reduced. No egg yolk, no liver or other glandular foods are to be eaten, and only a quarter pound of lean meat is permitted. One therefore must eat a good deal in the way of fruits and vegetables, and that doesn't make the average person very happy. Considering the extensive amount of atherosclerosis in the American population today and considering the necessity for great stringency in this dietary routine, it hardly seems likely that we as a people will change our habits of eating sufficiently to have any appreciable effect on this disease. And so a great deal of work has gone on to find some substance that will decrease or remove the offending molecules. With one most interesting exception, which I will discuss in a moment, these attempts have been more or less fruitless, but this one exception may eventually turn out to be a potent answer to part of the problem.

More important than even the possible practical application of this knowledge in the field of atherosclerosis is the development of considerable information about the nature of some aspects of fat metabolism. From the numerous and variegated studies that have gone on in the Donner laboratory under Doctor Gofman, an hypothesis has been developed regarding the nature of lipoprotein metabolism, as seen in the blood serum. By the ultracentrifuge technique, as perfected by him, various lipoproteins can be identified. In the normal human being, lipoproteins of the Sf3-8 are always present. (Absent or very sparse in the normal rabbit.) In atherosclerotic persons molecules of the Sf10-20 class exist, and molecules of higher classes up to Sf100 are also very apt to be present. From here on up one goes into higher and higher classes, including the "feasting" components, until one reaches the Sf 40,000 class, known as chylomicrons, which were by some thought to be the important factor in determining the development of atherosclerosis. Many of these classes have been isolated and studied chemically, so that we are beginning to have some accurate information of the differences of the various-sized molecules. The large chylomicrons consist mostly of neutral fat, and contain a small amount of cholesterol, and no protein. As one goes down to the smaller molecules, some of which are only a thousandth the size of the chylomicrons, one finds that the molecules become more complicated. They become denser as they become smaller, they begin to take on protein and phospholipid, and their cholesterol content increases. Below the Sf 3-8 class there are still further classes of even more complicated molecules, which are now being studied. These may be of great importance as molecules transporting the body hormones. By chemical analysis of the separate classes it is found that at least 95 per cent of the serum cholesterol, as determined by the usual chemical study of the serum as a whole, can be accounted for by the various fractions. Thus, a patient with a low or a low normal total chemical cholesterol study may have an excessively high reading of the important Sf10-20 class, and thus be having atherogenesis going on at a rapid

rate, although there would be no indication of this from the usual total chemical determination. Conversely, a patient with a high serum cholesterol could have a relatively benign Sf 10-20 reading, the elevated cholesterol coming from the components above Sf100, for example, which do not appear to be related to atherosclerosis. In general, it should be said that most people who have a total blood cholesterol over 300 mg. are apt to show an elevated Sf10-20 reading. Pierce(7) has shown that, in the alloxan diabetic rabbit, where *extreme* hypercholesterolemia develops, there is no correlation between the cholesterol level and atherosclerosis, but that there is a correlation in these animals between atherosclerosis development and the Sf 10-20 level. This is a clear answer to those who try to insist that chemical cholesterol readings are as valuable as the Sf 10-20 readings.

In the normal lipid metabolism, as seen in the serum, then, the large molecules break down into smaller ones, become more complex, and are eventually used up. That this is so has been demonstrated in many ways, and it has been shown that this metabolic process can be blocked by a number of methods—ACTH, cortisone, X-ray, toluidine blue, alloxan, etc., and, on the other hand, can be speeded up tremendously by one substance, heparin. Figure I demonstrates the distinct blocking pattern Doctor Pierce and I(9) found in normal rabbits. After cortisone is started, the small amounts of lipoprotein present disappear rapidly, and as the larger molecules are poured from the tissues into the serum, they are blocked at about the Sf 40-80 level and pile up to a tremendous level in the serum, accounting for the lipemia (and sometimes, with ACTH, death) that occurs in these rabbits. After cortisone is stopped, the larger lipoproteins then proceed through their normal metabolism, molecules of the smaller classes being formed; these, too, are used up and eventually one gets back to the pre-treatment lipoprotein pattern. The development of lipemia, noted by others, in these rabbits is explainable on the above hypothesis. It was a curious observation that in our ACTH group only the obese animals, 5 kgs. or more, were the ones that developed lipemia and convulsions and died. An animal of 2,500 grams could tolerate the same dose of ACTH with equanimity. The obese animals apparently poured too much fat into their sera, which because of the induced metabolic block, resulted in excessive lipemia and death. In contrast, to these rabbit studies, we were not able to demonstrate any effect on human beings treated with ACTH or cortisone, either on short term studies, or on long term studies, up to 19 months.(10) The reason for this marked difference in reaction between rabbits and human beings we have not attempted to explain. Perhaps it is a matter of dosage. It is important to state that our findings do not agree with Adlersberg, who reports that long term use of these hormones tends to produce hypercholesteremia and thus probably atherosclerosis. We found no significant increase of the Sf 10-20 molecules in our patients, treated with the usual therapeutic dosage, nor were we able to confirm his findings by serum cholesterol studies (using the Schoenheimer-Sperry method.)

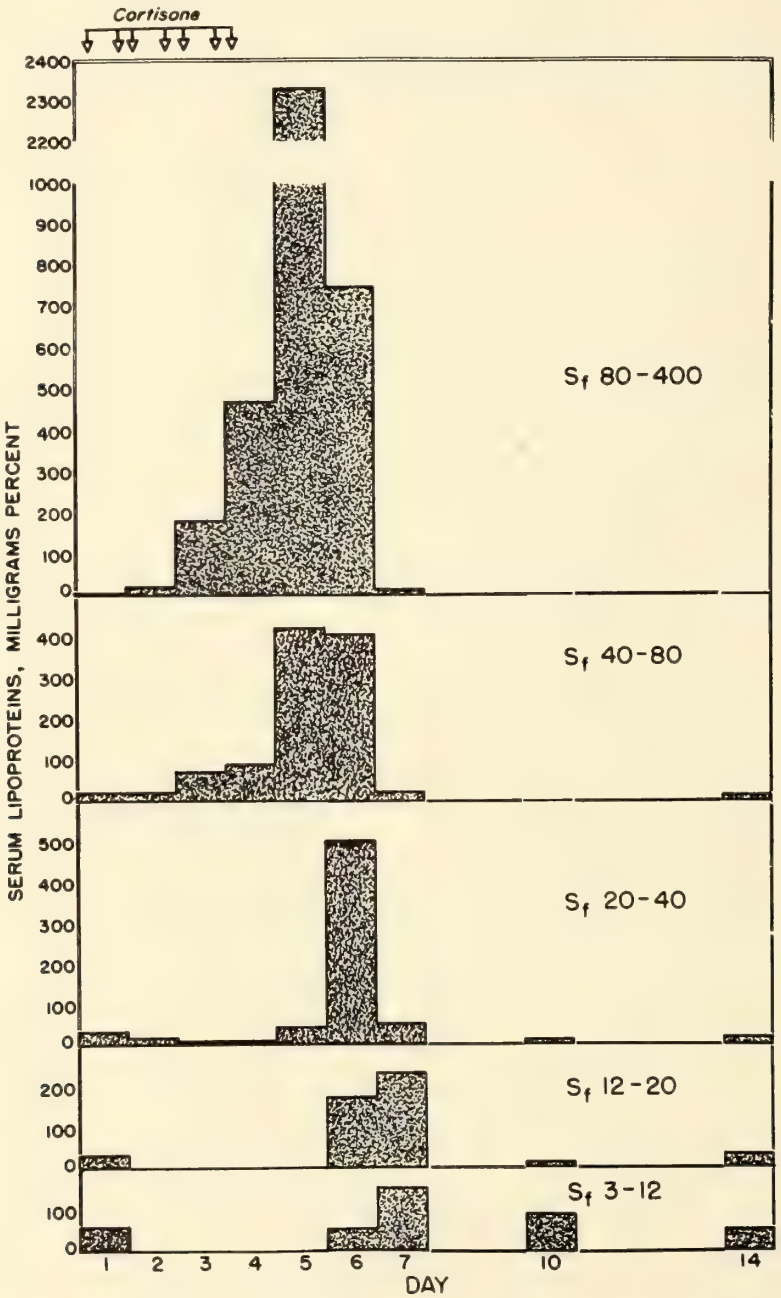
In contrast to the blocking phenomenon described, the opposite has been found with heparin. This substance, both in rabbits and in human beings, was found to produce an enormous hastening of the metabolic breakdown of the lipoproteins from one class into its next lower class. This has become of great practical importance in the treatment of angina and peripheral occlusive disease. Lyon(11) reported that 30 of 32 patients with classical angina had considerable relief from angina on being given 50 mg. of heparin intravenously twice a week. Engelberg(12) has reported that in 33 cases about two-thirds had appreciable relief from anginal pain. Moreover, he reports that there was improvement in some of the patients as judged by ballisto-cardiographic studies, the Master two step test, and in work capacity. In addition, by the use of heparin, in varying doses up to 100 mg. a day (which can be given subcutaneously in place of intravenously) about 80 per cent of 14 cases of peripheral occlusive vascular disease were improved, objectively as well as subjectively, blood flow increasing as much as 500 per cent. The explanation for the improvement from heparin in angina and occlusive disease is not at hand, even though the clinical results seems to correlate with the decrease of the Sf 10-20 serum levels. Obviously, this has nothing to do with the anticoagulant effect of heparin.

In the somewhat rare condition of xanthoma tuberosum, where one is dealing with excessively high serum cholesterol and Sf 10-20 levels,

the pronounced skin lesions in four cases have tended to vanish. Needless to say, no other substance is known to have such a remarkable effect.

I know of more than 100 cases of angina in which it has been used, with about 65 per cent reported good results. My own experience is limited to five cases. One is entirely free of angina while on heparin, two have been benefited, one was not helped, and one patient with severe angina and a previous occlusion had a second occlusion while he was on daily heparin, and died. It is likely that in the near future there will be many large series reported, so that we can have a better evaluation of a disease, which because of its essentially subjective character, is difficult to evaluate in terms of therapy.

From what has been said it is clear that the lipoprotein studies that have already been done by Gofman and his group at the University of California have considerably increased our knowledge of atherosclerosis, and lipid metabolism in general. Assuming the correctness of his views, we have at hand a means of diagnosing atherosclerosis by serum studies, we know that



in some patients the further development of atherosclerosis can be impeded by dietary regulation, and it appears that we already have available a substance which can so speed up the supposedly defective lipid metabolism that the offending molecules can be reduced in the serum. It is not heparin itself that is effective, but rather a substance produced in the body by heparin injection that has this remarkable effect. One may venture the guess that the cause of atherosclerosis is a deficiency of this heparin "factor." The obvious implication from the work of Gofman and his associates is that a method for prevention and treatment of atherosclerosis may be at hand.


REFERENCES

1. Anitschow, N. In Cowdry, E. V. Arteriosclerosis, New York. Macmillan, 1933.
2. Quoted by Dock, W. **American Journal of Medicine,** XII: 357, March, 1952.
3. Ibid.
4. Gofman, Lindgren, F.; Elliott, H.; Mantz, W.; Hewitt, J.; Strisower, B.; and Herring, V., **Science,** February, 1950, III:166.
5. Graham, D. M.; Lyon, T. P.; Gofman, J. W.; Jones, H. B.; Yankley, A.; Simonton, J.; and White, S.; **Circulation,** IV: 666, November, 1951.
6. Pierce, F. T. and Gofman, J. W. **Circulation,** IV:25, July, 1951.
7. Pierce, F. T. **Circulation,** V:401, March, 1952.
8. Gofman, J. W.; Jones, H. B.; Lyon, T. P.; Lindgren, F.; Strisower, B.; Colman, D.; and Herring, V. **Circulation ,** V: 119, January, 1952.
9. Bloom, B. and Pierce, F. P., **Metabolism,** I:155, March, 1952.
10. Pierce, F. P. and Bloom, B., **Metabolism,** I:163, March, 1952.
11. Lyon, T. P. Reported at Convention of A. M. A., Atlantic City, June, 1951.
12. Engleberg, H. Reported at meeting of American Heart Association, Cleveland, April, 1952.


# PHOENIX *Clinical* CLUB

## MASSACHUSETTS GENERAL HOSPITAL CASE NO. 17192

**The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.**

Dr. Edward G. Thorp*: This patient was a fifty-five year old single unoccupied native woman who entered December 2 following a profuse hematemesis. She came into the Emergency Ward comatose. Her history was given by her niece and was grossly inaccurate.

She had been living alone. The niece knew little about the patient's life except that she had had a series of hematemeses six or seven years before entry requiring three transfusions, and had been told that she had a duodenal ulcer, which was proved by x-ray. At that time she had been put on a diet the nature of which was not known. About six weeks before Thanksgiving she had a small hematemesis, the amount not known. She had adhered to the diet very well until Thanksgiving. Then she broke her diet.

On the morning of her entry at eight o'clock she first vomited blood. Two or three hours later she had another hematemesis. Her doctor gave her a sixth of a grain of morphia and sent her to the Emergency Ward. On the way here in the taxi she vomited a pint of blood, clotted not fresh. On arrival she was comatose, with blood smeared over her mouth and clothing. Her lips and skin were very pale. The pupils were pinpoint. The chest was clear in front. The back was not examined. The heart was enlarged to the left. The rhythm was regular. There was a systolic blow at the apex. The blood pressure on entry was 86/40. The radials were not sclerotic; we could not feel them. The abdomen was negative to gentle palpation. There were absent knee and ankle jerks. The red blood count on entry was just below 2,000,000, with a hemoglobin of 40 per cent. The white cell count was 12,950. The smear showed 86 per cent polynuclears, moderate achromia, marked variation in size and shape.

After entry the blood pressure rose rapidly to 100/40. Morphia in 1/6 grain doses was given. She could take only three doses. Then her respirations would go down to 10 and the morphia was omitted. At two o'clock in the morning the blood pressure fell to 78/30. She was put in shock position and a donor obtained. It was arranged that she should sleep in the Emergency Ward. A transfusion set was prepared so that we could transfuse her at a moment's notice in the ward. The blood pressure after that one low reading of 78/30 immediately rose to 85/40. The pulse had not changed at all. It was 100, occasionally rising to 105. An hour and three-quarters later, at quarter to four, the pulse and blood pressure were unchanged. As soon as I left the ward and went to my room the nurse called me and said the blood pressure was down to 58. The pulse was

*Recently senior interne on the East Medical Service.

still 105. I came back to the ward immediately and started to give an intravenous infusion, but before I could give it the patient became pulseless and died.

DR. A. J. FILLMORE:

This is the inaccurate history of an unoccupied fifty-five year old female who had had repeated episodes of gastro-intestinal bleeding for the past six or seven years and whose final day in the hospital was spent in a state of shock. I believe the state of shock was the cause of death.

Hematemesis indicates rapid bleeding above the level of the ligament of Treitz. Esophageal varices, gastritis, peptic ulcers and malignant ulcerations of the stomack are the most common causes of hematemesis.

There was only a short interval of observation of this patient during which time she was either kept in a comatose state with the use of the Morphia—or she was in a state of deep shock from th excessive loss of blood. It is difficult to determine which; however, here is an instance in which we are forced to "assume" to a large extent because of the absence of accurate history and because of scanty physical findings and laboratory procedures. The mode of death was not consistent with a healthy person simply bleeding to death. The coma and lack of cerebral function is sometimes seen in cirrhosis, terminally, and because hemorrhage from esophageal varicies is the second most common cause of severe hematemesis I think the possibility of cirrhosis is good.

Peptic ulcer is the most common cause of massive hemorrhage from the upper gastro-intestinal tract. Previous episodes of hematemesis or melena suggest the probability of peptic ulcer on a statistical basis because approximately 75% of all massive hemorrhages into the upper alimentary tract are caused by peptic ulcer.

In a comparatively large series of cases of shock resulting from severe blood loss or from trauma it was concluded that in such a case of shock the patient had lost approximately two liters of blood.

The surgically significant feature of reduced blood volume is an increased susceptibility to shock correctable by transfusion replacement of the blood volume deficit—on this basis some authors have proposed to designate such a syndrome as "chronic shock". Blood volume measurements on patients soon after hemorrhage or injury reveal that in cases with clinical manifestations of shock following skeletal trauma or hemorrhage the blood volume is thirty to forty per cent below normal. On the average 1.5 to 2 liters of blood are required for replacement.

I wondered about the relationship between the degree of lowering in blood volume and the level of systolic pressure. I found the report of an interesting experiment in which shock was produced in anesthetized dogs by severe burns. Immediately after the burn a large reduction in plasma volume took place and all of it was lost in the burned area. On continued observation the plasma volume continued to decrease gradually, but a considerable increase in circulating red cell volume occured so the total volume declined less than the plasma. Systolic pressure remained normal although accompanied by increasingly rapid pulse and respiratory rates until the total blood volume was reduced about thirty per cent when the systolic pressure suddenly dropped and the animal proceeded to die.

It has been shown that following the sudden loss of a significant quantity of blood there is an initial stage during which the body attempts reflexly by vasoconstriction to compensate for the reduced circulating volume by a corresponding reduction in the vascular bed and a mobilization of blood cells from certain depots, especially the spleen and liver. This is followed soon by a shift of plasma fluid from the surrounding tissue spaces into the systemic circulation. If the patient is in a relatively good state of nutrition and hydration and there is no further bleeding, compensation may be adequate and the patient will recover. But, if the bleeding continus the loss of blood may exhaust the body's ability to compensate and the patient will pass into a shock state.

In the presence of fully developed shock resulting from hemorrhage and characterized by falling blood pressure below 100 systolic and a steadily increasing pulse rate above 100 per minute prompt replacement of blood is indicated. The administration of blood should be continuous as long as the indications for blood persist regardless of the total amount of blood used. Successful treatment of massavie hemorrhage depends upon prompt restoration and maintenance of an adequate circulating blood volume which is usually not less than sixty per cent of the normal pre-hemorrhage level.

It is stated by Dr. Price, professor of surgery at the University of Utah, that if two liters of blood are removed from a man's vein and the

full amount is refused at once, the refusion will restore his blood volume to normal level. If the blood is withheld for three hours reinjection will not restore the blood volume to normal, instead a considerably larger quantity of blood than that removed will be required to get the blood volume back to normal and keep it there. If the re-injection should be delayed for six or eight hours even multiple large transfusions may fail to re-establish and maintain a normal blood volume.

There is probably nothing which causes intermittent hematemesis more commonly, such as over a period of six or seven years as our patient had, than ruptured esophageal varicies which result from portal hypertension usually secondary to cirrhosis of the liver. Acute hemorrhage from this cause may precipitate coma. Recent studies on the effect of acute blood loss have shown a greater reduction in portal blood flow than is suggested by changes in the systemic blood pressure and this means a marked decrease in the oxygen content of the portal blood. Since the liver receives seventy-five to eighty per cent of its oxygen from the portal system marked hepatic anoxia might be expected from severe hemorrhage.

No specific clinical finding other than coma serves to distinguish the comatose state in our patient. The presence of liver disease here can only be suspected, but in this situation with possible liver damage, more than in a case of coma entirely from blood loss, the injudicious use of sedatives may have been a factor in the production of coma in our patient. Most forms of sedatives seem to be poorly tolerated by patients with liver disease. This is especially true of morphine the fate of which is largely by detoxication in the liver. Detoxication proceeds slowly, only one-half the total amount is destroyed in twenty-four hours.

Fagin and Thompson in their discussion of cirrhosis observed that of fifteen patients dying in liver coma, the coma in six followed the administration of morphine by a few hours. As little as 1/6 grain may induce coma lasting up to three days or until death supervenes. Our patient had four doses of 1/6 grain in about a twenty hour period.

In an attempt to gain information about the patient from what was done for her during her short stay in the hospital one may wonder why she required so many hypos of morphine. She must have either been extremely restless or she did have considerable pain. It is stated that patients with esophageal varices have little or no esophageal pain, but have abdominal discomfort secondary to an enlarged spleen or liver or ascites. The periodicity and relationship of food to the peptic ulcer pain is well known, but the information from the scanty history does not give description of such pain.

So if we deduct from what was done as to what may have been present to cause such a lot of pain one not uncommon process to consider is that of mesenteric thrombosis. In an event such as that there is usually bloody stools with crampy pain and rapidly developing shock, which is the only definite thing we know about this patient.

The most interesting feature of this discussion I believe is not what disease the patient had but what might have been done to prevent death or to combat the state of coma as she presented on admission.

The management of this case was somewhat different from the usual procedure for such an emergency. The withholding of blood or any type of fluid up to the time of death is contrary to the usually accepted medical management in these parts. I believe massive, continuous transfusion of whole blood would have been the method of choice in the treatment of this case.

My diagnosis:

1. Acute shock from blood loss due to peptic ulcer with the injudicious use of morphine.

2. Esophageal varices, ruptured, with acute blood loss with hepatic coma and morphine over dosage.

I should like to say again that it would have been of great help to have had early replacement of the lost blood. Deficient circulation produced by low blood volume leads to tissue anoxia or hypoxia, which I believe is the preferable term now. It has been shown that the liver is especially sensitive to such tissue hypoxia. In case the period of depressed circulation is prolonged, irreversible changes occur. At this time even though more blood is injected than has been lost the blood pressure cannot be brought back to normal and death results. The problem resolves itself into the early adequate replacement of lost blood. But transfusions are of temporary value and they should be used to tide the patient over the critical period until

health is sufficiently restored for the body to take over the regulation and maintenance of blood volume.

CLINICAL DISCUSSION

Dr. Arlie V. Bock: Why was not cirrhosis considered?

Dr. Thorp: She had had no history of indigestion at all in the interval. She had been very comfortable.

Dr. Bock: We had a woman much like her a number of years ago who entered the hospital following a brisk hematemesis. She had been admitted a year before for the same reason. At that time a diagnosis of cirrhosis was made. In the intervening year she had not had symptoms. She died from hemorrhage. Her postmortem examination showed an advanced hobnail type of cirrhosis. There was no history of alcohol.

Dr. Chester M. Jones: One old cirrhotic has been back ten times or more in the past ten years and has had intervals of two or three years between the hematemeses.

Was leiomyoscarcoma considered here at all?

A Physician: I think she had carcinoma.

Dr. Fuller Albright: She had some anemia.

Dr. Thorp: That is the thing that worries us more than anything else.

Dr. Albright: I think she must have had something else.

Dr. Thorp: She had a small hematemesis six weeks before entry.

Dr. Bock: Her leukocyte reaction was very slight for the amount of hemorrhage that we should expect if this were bleeding from a duodenal ulcer. We know cirrhotics have a tendency to run a leukopenia, which may have influenced the whole cell response.

Dr. Tracy B. Mallory: Does anyone want to hazard a guess about Banti's disease?

Dr. Bock: She was too old for that.

Dr. Mallory: It certainly would be unusual on that score.

CLINICAL DIAGNOSIS

(From Hospital Record)

Peptic ulcer, bleeding

ANATOMIC DIAGNOSIS

1. *Primary disease.*

Cirrhosis of the liver.

Esophageal varices.

Ulcer of the esophagus with performation.

2. *Secondary or terminal lesions.*

Ulcer of the duodenum.

Hyperplasia of the spleen.

PATHOLOGIC DISCUSSION

Dr. Mallory: I am not perfectly sure what she did have. But she certainly had a sharply punched out ulcer in the duodenum. There was no evidence of bleeding—no vessels of significant size were present in the base of the ulcer. I do not believe that was the source of her hemorrhage. There were varices in the esophagus and over one of them was a shallow ulceration in the mucosa. Microscopic examination shows immediately under that shallow ulcer a hugely dilated vessel with a great deal of fibrin adherent to the inner surface as though a fresh thrombus were forming in an effort to close a fresh perforation. I am satisfied that her fatal hemorrhage came from the esophagus, not from the duodenal ulcer.

She had a big spleen, 500 grams. It is much firmer than normal, slightly but not strikingly fibrous. We examined carefully the portal and splenic veins, but there were no thrombi.

She had a somewhat small liver, about 1000 grams, which was not nodular but did feel more fibrous than normal. It is not a characteristic picture of cirrhosis of the liver, though it has to be classed as a very mild cirrhosis.

Dr. Bock: Were there no other big veins around the spleen or any where else?

Dr. Mallory: No, nothing striking at all.

I remember another autopsy in which there were definite esophageal varices where I could not demonstrate a rupture. In that case too there is a history of gross hematemesis with more than a pint of blood, yet we found an absolutely normal liver and spleen. I do not see why it is not possible theoretically at any rate that varices might occur in the esophagus as well as elsewhere spontaneously without cirrhosis or thrombosis in the portal vein. In varicose veins of the extremities, in the type of varices that cause hematocele, and in many cases of hemorrhoids it is impossible to demonstrate in most instances any satisfactory local etiology. I do not see why it is not quite possible that some people may have larger veins in the esophagus than others and may develop varices without cirrhosis of the liver at all.

Dr. Bock: She did not have diaphagmatic hernia?

Dr. Mallory: No.

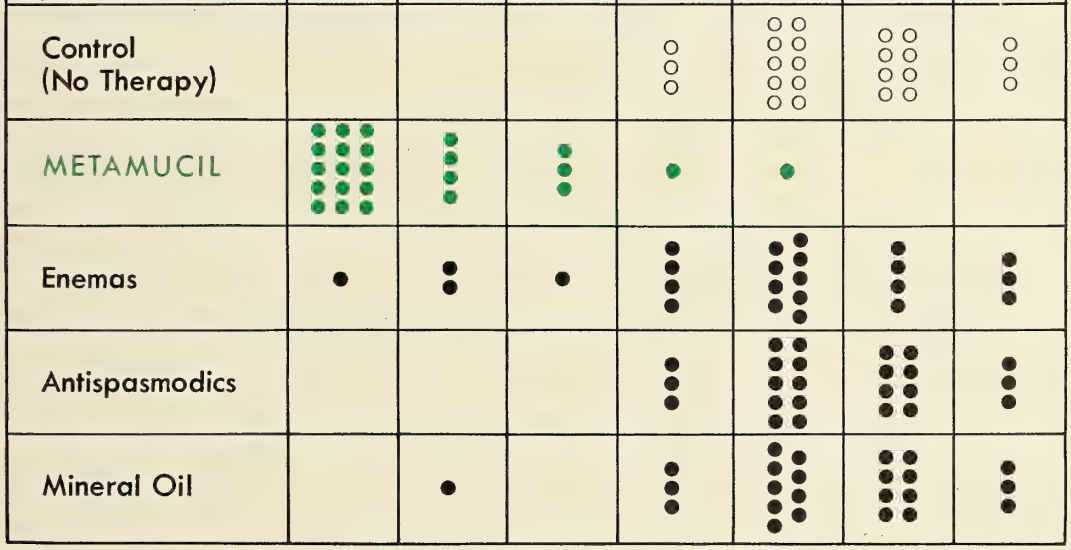
Dr. Jones: Why do you think the spleen was enlarged?

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*Barowsky, H.: A Roentgenographic Evaluation of the Common Measures Employed in the Treatment of Colonic Stasis, Scientific Exhibit, National Gastroenterological Association, Chicago, Sept. 17-22, 1951.

RESEARCH IN THE SERVICE OF MEDICINE SEARLE

Dr. Mallory: I cannot answer that. One is tempted to connect her varices with the enlarged spleen and call it Banti's disease, but true Banti's disease should show thrombosis of either the splenic or the portal vein.

Dr. Jones: If there were a little closer connection it would be interesting to connect this with the case discussed recently at one of the medical staff meetings in which a splenectomy was done with frank cirrhosis of the liver. The question was raised as to what effect it would have on the ascites and the portal circulation to take out the spleen. In these cases it was apparently of great benefit. You have not got your proof of vascular disturbance here, have you?

Dr. Mallory: No.

There is another group of cases in this connection a little commoner in my experience, cases of frank hematemesis, in which I have been able to find nothing at autopsy except numerous scattered petechial hemorrhages throughout the stomach. I feel sure it is possible to get gross hematemesis merely from them.

Dr. Jones: We do in diabetes.

Dr. Thorp: I should like to ask what her critical level of blood pressure should have been. I thought that maybe if we waited until it was 80 it would be safe. A surgical senior house officer concurred in that opinion.

Dr. Frederick T. Lord: It is extraordinary, I think, how variable some of the responses to low blood pressures are. We have in general regarded anything under 90 as a critical level. We have had several experiences in the hospital with the persistence of low blood pressures with maintenance of life for a considerable period of time. For example, in a fatal case Dr. Churchill operated on for pulmonary embolism the blood pressure remained for a number of hours at about 70. Another patient with a bleeding peptic ulcer had a blood pressure in this neighborhood for four or five hours and recovered. With lobar pneumonia, the blood pressure may be low in consequence of toxemia. In a serum-treated Type II pneumococcus infection in a woman of thirty-two in the wards last December the blood pressure remained at 70 systolic and 50 diastolic for most of one night and the following five days varied from 90 to 110 systolic. The patient recovered.

Dr. Walter Bauer: A blood pressure of 60 is not compatible with life if it lasts longer than half an hour, particularly if the drop in blood pressure was sudden.

Dr. Albright: Don't you think we are considering blood pressures in connection with a normal hemoglobin? There is such a low hemoglobin here that what would ordinarily not be a critically low level of blood pressure might be so in this case.

Dr. Lord: A hemoglobin less than 25 per cent is supposed to be incompatible with lift.

Dr. Albright: I mean the combination. Usually we have a fairly high hemoglobin level during the acute stage of hemorrhage.

Dr. Edward L. Young, Jr.: I am occasionally told by an anesthetist, while operating on some difficult or long drawn out case, that the patient's blood pressure has entirely disappeared. This is not necessarily fatal nor has it proved to be necessarily a bad prognosis. It practically always comes back and I am sure I have seen it remain below 70 systolic for several minutes at a time. Unless there is some contraindication, such a patient has the head of the operating table lowered and sometimes is given some stimulation on the table.

Dr. Lord: I watched a patient in consultation outside this hospital for about an hour with no blood pressure. She died some time between the time I left her and the time I got home. I could not get it at any time during my period of observation. The extremities, neck and head were cold and clammy the skin and mucous membranes pale and the pulse rate 150, but she was conscious and clear mentally.

Dr. Thorp: I had a man in the Emergency Ward with probably hemochromatosis with a blood pressure of 45 over a period of five hours.

Dr. Mallory: An extreme degree of contraction of the peripheral vessels might explain a case like yours, Dr. Lord.

Dr. Lord: I thought it was a coronary thrombus. The patient was in a condition of shock. We are dealing in acute hypotension with a number of factors. In patients with pulmonary embolism and coronary thrombosis there is probably peripheral collapse of blood vessels from sudden suspension of the circulation. In patients with hemorrhage, rapid loss of blood produces acute decrease in blood volume. The toxemia of infection may produce vasomotor changes with consequent increase of vascular bed from capillary distention.

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1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.

2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. (See MEDICAL WRITING by Morris Fishbein.)

3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.

4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.

5. Submit manuscript typewritten and double-spaced.

6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.

The Editor is always ready, willing, and happy to help in any way possible.

## DIAGNOSIS OF SYPHILIS BY LABORATORY METHODS

The methods of making serological diagnosis of syphilis consist mainly of two types of tests, the complement-fixation and the precipitation types. There are adherents of both methods. This article is not intended to evaluate the various serological procedures for the diagnosis of syphilis, but merely to acquaint you with some of the methods currently in use. We will confine this article to the microscopic preciptation methods, giving some advantages and disadvantages of each. However, we will not exclude the older methods upon which these procedures were founded.

The Wasserman test, (a complement-fixation test) in theory is based upon antibodies of the third order. However, equally valuable tests, called precipitation, or better, as flocculation tests, do not employ complement, but a lipoidal emulsion as an indicator. Cholesterol is added to the antigen to increase sensitivity by increasing the surface on which reagin may act. The term *reagin* is the active factor of syphilitic serum, or the substance which reacts with the antigen. While the serological methods which are employed in the diagnosis of syphillis are quite valuable and reliable, the theory that explains the specificity of these reactions will remains to be promulgated.

Before antigens may be used in the precipitation methods, an emulsion must be prepared. We will discuss briefly the antigens employed in each method. All sera tested by these methods must be inactivated for ½ hour at 56°C. to destroy its natural complement.

KLINE TEST (Lipoidal Antigen)

Antigen emulsion is prepared by mixing specified amounts of distilled water (pH about 6.0), 1% cholesterin, antigen, and 0.85% sod. chloride solution (pH about 6.0). The 1% cholesterin solution is prepared by placing it into an oven at 50° to 56° C. for forty-five minutes. Shaking gently a few minutes at fifteen minute intervals. The emulsion when mixed is placed in a water bath at 35° C. for 15 minutes, after which time it is ready for use. This emulsion kept at room temperature is satisfactory for use, for forty-eight hours after preparation. This emulsion viewed microscopically (x 120) shows numerous fine particles evenly dispersed. When in contact with syphilitic serums they tend to clump, in various degrees, depending on the amount of reagin present. Although preparation of this emulsion is somewhat time consuming for smaller laboratories, the duration of its usefulness must not be overlooked.

MAZZINI TEST (Cholesterinized lipoidal antigen)

Unlike the antigen emulsion used in the Kline test, this emulsion is easily prepared by merely mixing cholesterolized antigen in a buffered saline solution. This solution must have a pH of 6.3 to 6.4 and a salt concentration of 10 grams per liter. However, the simplicity of preparation is somewhat offset by the ripening period of three hours, at which time it reaches its optimum sensitivity. To accelerate the ripening time, place in refrigerator at 6 to 8° C. for 15 minutes then use immediately. This suspension may be used for 24 hours, after which it decreases in sensitivity. This antigen emulsion has the same effect on reagin as does the Kline emulsion, but shows more variety in clumping. This test is very useful as a screening measure in clinics, hospitals, and in blood banks.

V.D.R.L. TEST (Cardiolipin antigen)

This new microflocculation test using cardiolipin antigen has been devised by the Venereal Disease Research Laboratory of the U. S. Marine Hospital at Straton Island, New York (May, 1946). It is a rapid slide test requiring a minimum of equipment and apparently is more sensitive than the conventional methods. To prepare the emulsion, merely mix the cardiolipin in buffered saline (having a pH of 6.0 plus or minus 0.1), shake for 10 seconds, and it is ready for use. The reaction is either positive, negative or doubtful; there are no degrees in clumping as in the Mazzini test. Another advantage of this method is that serialdilutions can be made of serums, thereby aiding in treatment of patients. This test is also very useful in screening out syphilitic patients. Because of the simplicity in preparation of the emulsion, and of its ready application, this method is becoming quite popular.

MAZZINI (Cardiolipin Antigen)

Since the isolation of cardiolipin and the purification of lecthin by Pangborn the reagents have been adapted to numerous technics for the serological test for syphilis. In adapting these reagents to the Mazzini technic only minor changes have been made; the basic characteristics including simplicity of preparation of the emulsion and performance of the test remain the same. While employing the same total quantity of reagents as in the original technic, a variant, (used to accelerate the ripening period of this antigen,) allows the emulsion to reach optimal sensitivity immediately after preparation. In the development of the lipoidal antigen, the exact role of egg yolk was not clearly understood. It is now well known that cardiolipin alone is but feebly "antigenic" and that the addition of lecithin compliments it. Within limits the higher the lecithin ratio the more reactive the antigen will be. Therefore, egg yolk supplies the additional lecithin necessary to produce a high sensitivity antigen. Varying degrees of clumping of the antigen particles, simplicity of preparation of the emulsion, relatively high sensitivity (82.2%) and immediate use of the emulsion give this test many possibilities for adapting it to any particular serological routine.

SENSITIVITY

The relative sensitivity of the new micromodification, the old macroflocculation technic, and an icebox Wasserman test, based on 503 sera from syphilitic patients under treatment or observation showed the following percentages according to Dr. Gradwohl (1948). The new microflocculation revealed 414 positive or 82.3% and 19 doubtful or 3.8% with a total detected of 86.1%. Of the 414 positive results, 379 were positive, viewed both macroscopically and microscopically; 26 were doubtful macroscopically, and definitely positive microscopically; and 9 were apparently negative macroscopically, and definitely positive microscopically. Note the smaller proportion of doubtfu tests with this technic. The old macroflocculation method showed 343 positive and 53 doubtful, or a total detected of 78.7%. The Wasserman method showed 277 positive and 61 doubtful or a total detected of 67.1%. In the 1950 Serologic Evaluation Study of (34) State Laboratories performing a representative number of specimens, the following results of sensitivity were obtained. The V.D.R.L. test obtained ratings of from 64.1% to 86.9%, the Kline Standard 70.9% to 85.5%. Other conventional tests such as the Standard Kahn 72.5%, the Kolmer Simplified 78.1%, Mazzini Flocculation 78.2%, the Mazzini Cardiolipin 82.2%.

SUMMARY

Since the original Wasserman test was developed, many serological tests for syphilis have been devised. Comparative evaluation studies have demonstrated that there are several methods that may be considered standard and are recommended for use in all laboratories. The Kline test, a microflocculation test that requires a small

amount of serum and antigen, and the reaction observed under the microscope (x 120). The Kahn test, now known internationally, is a macroflocculation test that requires a larger quantity of reagents than the Kline test, and more time is required to perform it. The Kolmer modification of the Wasserman test has been the standard complement-fixation test in this country for many years. Mazzini's rapid, microflocculation, slide test, is popular because of the varying degrees of clumping. More recently, the cardiolipin method has taken its stride in popularity because of its simplicity, rapidness, and apparently high degree of accuracy. The outstanding technical limitations of flocculation test employing cardiolipin is the susceptibility of this antigen to produce a disproportionate number of zonal reactions with strongly positive sera, such as those from high-titer late primary and early secondary syphilis. However, zonal reactions are incomplete reactions due largely to a nonoptimal antigen reagin ratio. While it is admitted that 100% sensitivity and 100% specificity cannot be attained by the use of cardiolipin lecithin antigens, it can be said that vast improvement of the various serodiagnostic procedures have been made possible by the excellent work of Pangborn. It must be remembered that the reproducibility of results by a given technic is largely dependent upon the skill of the individual performing the test.

Compiled by—Paul Jonas Jr.

REFERENCES

1. Gradwohl, R B. H., Clinical Laboratory Methods and Diagnosis; Volume 2, 4th Ed., C. V. Mosby Co. 1948.
2. Todd, I. C. and Sanford, A. H , Clinical Diagnosis by Laboratory Methods; 10th Ed. W. B. Saunders Co. 1944.
3. Mazzini, L Y., Journal of Immunology, Vol. 66 No. 2, February, 1951.

# TOPICS OF *Current Medical* INTEREST

## RX, DX, AND DRS.

By GUILLERMO OSLER, M. D.

The ARTHRITIC is again led to hope. . . . A new Swiss drug is being touted by some pretty good men as a relief for pain, a reducer of inflammation, and a relaxant of stiff joints. . . . The drug, sold by Geigy Company, is PHENYLBUTAZONE (or, by Geigy, 'Butazolidine'). . . . It is said to be effective in osteoarthritis, and notably in gout. Its cost is a third that of cortisone; it must be continued for effect; and it has certain unpleasant side-effects. About 25 per cent have nausea, hives, or water retention, and about one in twelve must stop taking it.

Phenylbutazone is not a hormone, and is said not to modify the endocrine balance. This Osler has enquired from Dr. Hemming of the Geigy Co., and Dr. Boland of Los Angeles, and Dr. Schafferzick of Stanford whether the drug is hazardous. There is no such evidence (YET), but most of the several dozen patients with TB and arthritis have not been followed after the drug was stopped. It has been noted that the tuberculosis symptoms often subside during therapy, as they do with the adrenal corticoids, and that is suggestive of the relapse that may follow withdrawal. . . . The situation is worth study—and the drug could be withheld in the combined diseases until we're sure. It is also a reason for routinely x-raying another special segment of the population—the arthritics.

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**The Journal of Thoracic Surgery for June contains the new list of members of the American Ass'n. for Thoracic Surgery. Arizona is too limited in its membership, and there are others who should belong. . . . Charles T. Read of Phoenix is an Associate Member, and the only one practicing in Arizona. W. H. Oatway Jr., an editor of ARIZONA MEDICINE, formerly of Tucson, is an Active Member. . . . The interest in NEXT YEAR'S MEETING should be considerable, tho, since it is scheduled for San Francisco, on March 27, 28 and 30, 1953.**

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One of the toughest therapeutic nuts to crack is ALLERGIC RHINITIS, and Arizona attracks more than almost any area. . . . Supplementing adrenal substances may help, but one doesn't do that in a carefree manner. Krohn and Pottenger (F. M. Jr., not his father who treats tuberculosis with tuberculin) reports success with the use of TOCOPHEROL. . . . They believe that a vitamin E deficiency causes edema, and that use of the substance causes diuresis and decrease in edema. They gave 100 to 400 mg. of tocopherol daily, plus a diet (not effective alone) containing lecethin, unsaturated fats, B vitamins, and protein. These all contribute to lipid metabolism. . . . The part of the story where we urge caution is that all cases improved, but there were only six cases.

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**Wails have continued to rise from hospital administrators who have to compete with VA hospitals (Hospital Topics). . . . Their wage scale may be 40 per cent higher than the local rates. . . . Trained help is drained from the community hospital. Occupancy may be only 40 to 50 per cent.**

**Rules for admission may be laxly observed. The cost of administration can be murder on the tax dollar. Etc., etc. . . . It is a challenge to the V.A. as well as to the local hospital.**

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THE AIR IN HOSPITALS AND OFFICES,— Several items of news concern care of the air,—

1. Air-conditioning is said to be one of the most profitable future industrial fields. As a starter, we can now purchase a refrigeration conditioner for a moderate-sized room for $225, a reduction of $100 which was predicted in Arizona Medicine 3 years ago.

2. Ultra-violet light can be used to sterilize air near the floor or ceiling by reflection from a 2,537 Angstrom unit tube. Any manufacturer can tell how to place the radiator, how to circulate air into its range, and how much the various types of wall-cover will reflect the rays.

3. Triethylene glycol is still the best germicide for vaporization in nurseries, operating-rooms, etc.

4. Odor control is being given a lift by the use of electric bulbs which produce ozone. The ozone kills most odors. (This method aids or replaces exhaust fans, super-position of one odor on another, or deadening the sense of smell).

5. Oiling of floors, furniture, and bedclothes is still a good but rarely-used method which reduces bacterial dispersion, and resultant infections. F. J. Sullivan, a New York engineer, suggests that oiling be combined with the use of U.-V. light.

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**H. N. Shaw has a brief report on TRICHOMONAS VAGINITIS in the May Annals of Western Medicine & Surgery. . . . He has found devegan a bit better than dozens of other methods; uses one tablet per vaginum each night for 6 months; has found 3 among 1,800 cases who were sensitive to the arsenic; and believes that toilet-seats are important in transmission (among female members of the same family).**

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Another article in the same journal (A. W. M. & S.) is a further report by Bodsook and colleagues on the use of BETAINE AND GLYCOCYAMINE. . . . The effects in heart nutrition were described here several months ago. Now they have used the drugs (which are quite well tolerated) for bettering the nutrition of skeletal muscles in POLIOMYELITIS. . . . Glycocyamine is converted to creatine in the presence of betaine, and muscles (especially damaged muscles) seem to thrive on added amounts of creatine. . . . Twenty-six of 31 cases obtained muscle improvement, and most of them felt better. There must be motor unit activity or residual power, as determined electromyographically.

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**The diagnosis by TELEVISION/X-RAY has been reported, but was not clearly explained. One can see how a chest film could be shown on television, and physicians in distant cities could report their impressions by telephone. . . . The explanation of the enlarged use of the technique comes from a preliminary report of a new machine with images 300 to 3,000 times brighter than by fluoroscope. The movements of the heart, blood vessels, and intestinal tract can be demonstrated by the usual contrast methods, and televised. . . . The inventor is Dr. R. H. Morgan, now of Johns Hopkins, and once the 'automatic timer' man of the U.S.P.H.S.**

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The advent of TELEVISION in Arizona brings up the status of the T V M D's. This does not concern the doctors who speak on medical programs, nor even the 'doctors' who advertise. It means the programs which use phony MD's to boost the sales of a product. . . . Do you want to sell bread, a deodorant or a hairtonic. or prove how little damage a cigarette does to the bronchi? Get an actor, a white coat, and a stethescope. . . . The public can't be expected to know about the masquerade, so (says Dr. Paul Foster of Los Angeles) the Medical Services Council of the A.M.A. should recognize and try to squelch it.

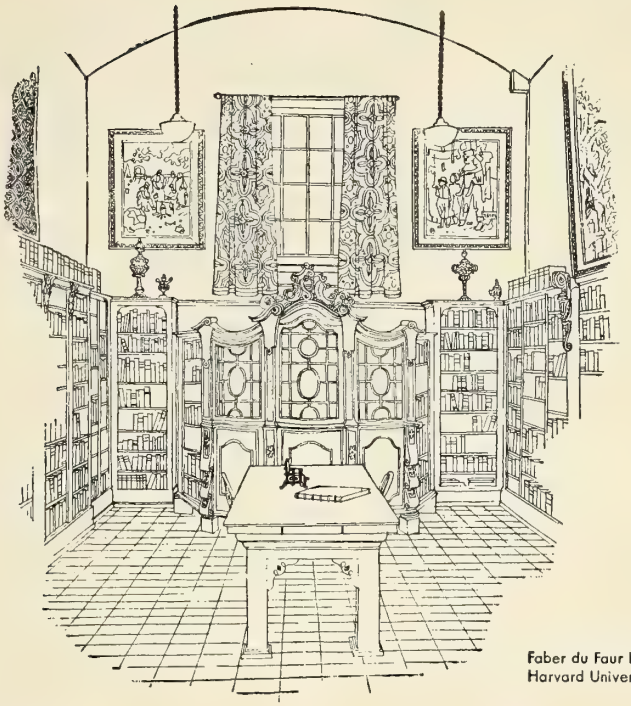
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**The Army is said to be experimenting with PLASTIC BLOOD BAGS (mentioned in this column last year as a novelty used by a Boston physicians). . . . The bags are 6x8 inches, are used for whole blood, have advantages over glass (weight, breakability, space), and can be dropped from planes.**

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A sign saying 'BEWARE! BUTTERFLIES!' would be odd and apparently lacking in medical interest, yet such a warning both exists and is interesting. It has been culled from such an unlikely source as the publication of a Standard Oil Company. . . . It seems that the San Juan river, running from the eastern Venezuelan oil-fields, empties into the Gulf of Paria. At that point there is the Maturin Bar, a collection of underwater silt which forces most vessels to wait for high tide to cross it. . . . One deep-draft vessel with a crew of 40 waited to pass, and were surrounded by moth-like butterflies. About a day later a mysterious skin irritation appeared, with fearful itching and no medical relief. . . . A telegram from the captain to New York set in motion their medical group, the U.S.P.H.S., and experts from the Dep't. of Tropical Medicine at Harvard. The diagnosis, except by the company doctor, was 'probable scabies, with a chemical dermatitis'; he believed the ship was too clean for scabies. . . . Within a few days a ship reached New Orleans by way of the Gulf of Paria; she had a crew which was almost mad with an itch; she had been plagued by moths in the Gulf. . . . The American Museum of Natural History classified the pest as a member of the genus Hylesia. They have finely barbed hairs which detach and float, land and irritate. The diagnosis is 'moth dermatitis', but the sailers of the ships (including a fifth one which tried to clear a channel on the Maturin Bar) call it 'butterfly itch', and (doubtless) quite

*New aureomycin minimal dosage for adults —four 250 mg. capsules daily, with milk.*



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Aureomycin has its activity greatly increased in an acid medium, rendering it highly useful in the normally acid urine.

Aureomycin has been reported to be useful in infections commonly seen by urologists, including:
Genitourinary infections caused by *E. coli*, *A. aerogenes*, *S. faecalis*, paracolon bacillus, staphylococcus, streptococcus, and enterococcus • Chronic or Resistant Urinary Infection* • Gonorrhea • Nonspecific Urethritis*

***Throughout the world, as in the United States, aureomycin is recognized as a broad-spectrum antibiotic of established effectiveness.***

*Capsules:* 50 mg.—Bottles of 25 and 100; 250 mg.—Bottles of 16 and 100. *Ophthalmic:* Vials of 25 mg. with dropper; solution prepared by adding 5 cc. of distilled water.

*When caused by aureomycin-susceptible organisms.

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a few other names not printed in the report.

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**How to be your own detective, or what evidence to use in ESTABLISHING THE TIME OF DEATH,—write to Dr. Alan Moritz of Cleveland, a specialist in pathology and forensic medicine. In lieu of a complete list of tests, remember that 98.6F., minus the body's rectal temperature, divided by 1.5 equals the number of hours that have elapsed since death. Roughly. . . . This piece of news can break up a dinner party. (Roughly).**

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Spink of Minneapolis, a leading sulfonamide author, has come up with an observation on an obscure condition. . . . HUMAN LEPTOSPIROSIS (due to leptospirapomona) has been diagnosed in Minnesota. Further, it has recently been found in Georgia, Alabama, and Texas, just to keep us all on our toes (or heels). . . . The leptospirais a cousin of the one which causes Weil's disease. Its reservoir is in swine, and it has been called "swine-herd's disease." It is endemic in hogs in the U. S., with some transmission to other animals, tho the manifestations are few. . . . It most often occurs in males. It has a febrile onset, with a plateau of 3 to 6 days, followed by a remission and a second illness. Conjunctivitis and meningisms may occur. It may be mistaken for infectious monucleosis or for brucellosis. . . . It can be diagnosed by agglutination in man. . . . Therapy in the first stage is reported to be effective with aureomycin or terramycin.

## REPORT OF THE DELEGATE

House of Delegates
American Medical Association
June 9-13, 1952

Before discussing in brief some of the positive actions taken by the A.M.A. House of Delegates at the June session in Chicago, it should be mentioned that Atlantic City and Boston were chosen for the annual and clinical meetings for the year 1955. The President-Elect is Dr. Edward J. McCormick, of Toledo, the new Speaker of the House, is Dr. James R. Reuling, Bayside, N. Y., with a new Vice-Speaker, Dr. Vincent Askey, Los Angeles. Successor to the seat occupied by Dr. McCormick on the Board of Trustees is Dr. James R. McVay, Kansas City, who for some years has been Chairmn of the Council on Medical Service. Dr. Paul D. White, of Boston, noted cardiologist, was voted A.M.A.'s distinguished service award.

An interesting and exciting time began for the House of Delegates when the President of the AMA, Dr. John Cline, finished his address to the House of Delegates with an attack on the motivation of the Truman-appointed group who constitute the President's Commission on Health Needs of the nation, its Chairman being Dr. Paul Magnuson. The Commission was accused, thru its staff, of distorting testimony presented by panel discussion participants. When he finished, an Illinois delegate presented a resolution of some length, suggesting that the President's Commission was an instrument of "socialized medicine," and naming its Chairman, Dr. Magnuson, "an unwitting captive of the forces of socialization." The floor was then taken promptly by Dr. Russell Lee, one of the delegates, and also a member of the Presidents Commission, who explained as best he could the functions of this Commission, and made quite an appeal for fairness in the attitude of the House of Delegates, and warned against prejudgment of its true functions.

As a result, after some parliamentarian mixups, the resolution alluded to above was tabled by vote of 85 to 77, and referred to a reference committee.

The next day, Dr. Magnuson appeared before the reference committee along with the members of the Board of Trustees, and many other interested delegates. During his testimony, Dr. Magnuson emphatically repudiated Oscar R. Ewing and his national health insurance plan, he asked that the AMA not take precipitant action in its judgment of the President's Commission. Differences over methods used by the Commission's staff in editing and digesting transcripts of panel discussions participated in by representatives of the AMA and other organizations were aired thoroughly. Dr. Magnuson reviewed the events which lead to the establishment of the Commission, and his selection by the President as its Chairman, and stated that the President took no exception to his statement that "I will not have anything to do with anything that puts more bureaucracy into American Medicine."

The statement of the Chairman of the President's Commission that the "AMA at the top is political", and his criticism of Whitaker and Baxter at this reference committee hearing drew sharp remarks from some members of the Board of Trustees. His remarks that the AMA had become prisoners of its press agents, tended to aggravate a very tense situation.

The whole matter was then presented to the House of Delegates the next day, with the



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Arizona's growth during the past 75 years has largely paralleled the growth of Arizona's mining industry. True, the population in Arizona's mining camps has not grown proportionately with the population in Arizona's valleys. But payrolls have constantly increased, and today Arizona's mining camps provide payrolls which bring prosperity to the merchants and suppliers throughout the whole state.

At open pit mines, this payroll consists of shovel runners, truck drivers, drill operators, railroad men, concentrator operators and smelter men, together with the usual complement of surface men, machinists, pipe men, engineers and office men. Miners and muckers, pipe men, track men, motormen, timber men, hoist men operate the underground mines with the necessary surface labor. These men draw higher wages than any other Arizona grouping in the U. S. Employment reports.

> With this large payroll, Arizona's mining industry maintains production at a level the value of which exceeds that of any other state in the union — a vital contribution to America's defense effort and a definite part of the American way of life.

The mining industry payroll supports the mining camps of Arizona—those communities where life is pleasant for those living there. At Ajo and Bisbee, Globe and Miami, Ray and Hayden, Morenci, Superior, Inspiration and Douglas—and all of the other towns in Arizona where mine employes live—will be found the conveniences of modern American life. Good roads lead to more populous centers and merchants in every town profit from the mining industry payroll.

The payroll in 1951 amounted to **$52,308,388.00** the largest portion of which was spent in Arizona, adding materially to Arizona's prosperity. For the past five years, the mining industry in Arizona has paid **$228,134,997.00** to its employes in this state.

> **To perpetuate these payrolls in the future, the mining industry is constantly spending further vast sums of money searching for and developing new properties such as San Manuel, Silverbell, Copper Cities, Bisbee and the asbestos and manganese deposits over the state.**

## ARIZONA MINING INDUSTRY

**Arizona Small Mine Operators Association,** 60 Councils in 11 Arizona counties, 3800 members; **American Smelting & Refining Company,** Hayden, Patagonia and Silverbell; **Bagdad Copper Corporation,** Hillside; **Castle Dome Copper Company,** Miami; **Copper Cities Mining Company,** Miami; **Eagle Picher Mining & Smelting Company,** Sahuarita; **Inspiration Consolidated Copper Company,** Inspiration; **Kennecott Copper Corporation, Ray Mine,** Ray; **Magma Copper Company,** Superior; **Miami Copper Company,** Miami; **Phelps Dodge Corporation,** Bisbee, Douglas, Ajo, Morenci, Jerome; **Sam Knight Mining Lease,** Christmas; **Shattuck Denn Mining Corporation, Iron King Mine,** Humboldt; **St. Anthony Mining & Development Company,** Tiger; **Arizona Asbestos Producers Association,** Globe; **Wenden Manganese Producers Association,** Wenden.

President and new President, Drs. Cline and Bauer denying the charges as to the Whitaker-Baxter's past authority, emphasizing that the Board of Trustees has always endorsed any move made by these public relations employees, and assumed full responsibility for all measures which they took to combat national health insurance. In his second address to the House, Dr. Bauer said "But for Whitaker and Baxter, and their campaign, we would now be under Oscar Ewing." When the question was called for before the House, on the passage of a resolution expressing confidence in the conduct of the officers and trustees in their activities dealing with the Commission on Health Needs, there was almost a unanimous yes vote. The resolution as finally passed refrains from any attack on the Presidents Commission; while, on the other hand, it indorses the charges of political motivation for its creation by the President, that was lodged by the AMA officers and board of trustees. For a full context of the remarks of President Cline on the subject of the Presidents Commission, the members are urged to read them in the A.M.A. Journal, issue of June 28, 1952, on page 855, together with the content of the original resolution presented by Dr. Furey, of Illinois, and the report of the Reference Committee on Legislation and Public Relations, both contained on page 857 of the same issue.

The House of Delegates also registered opposition to section 3 of House Bill 7800 in the national congress, which was to be before the House for vote a few days following the close of our convention. It can be said at this writing that the House did pass the original H.B. 7800 under suspension of the rules in quick time soon after adjournment of our convention, in spite of protests on the part of AMA. The original bill, as passed by the House, contained the controversial Section 3 which provides for the establishment of the administrative machinery to determine permanent and total disability among potential beneficiaries under the Old-Age and Survivors Insurance provisions of the Social Security Act. The senate had previously passed this bill, eliminating Section 3 in its entirety, so when the House passed it with this Section, conference committees between both Houses were set in motion, with the result that compromises finally adopted set up a law that is most confusing. The AMA opposition to Section 3 of this law springs from the fact that it would extend an unwarranted degree of power to the Federal Security Administrator, who would make regulations for medical examinations to determine disability of that section of our citizens affected, and would, in substance, place another segment of our population under socialized medical care, with Oscar Ewing at the helm to steer its course.

As a result, between Senate and House conference committees, compromise legislation on Social Security Amendments (H.R. 7800, July 5, was adopted. The A.M.A. did not oppose any of the sections of this bill, except section 3, and in passage of the law, this section was revised to retain 'waiver of premiums' and to provide 'medical determination of permanent and total disability at the State rather than at the Federal level. However, confusion over this section arises, since section 3 is wholly inoperative as it will expire automatically June 30, 1953, which is one day set by the law that was passed before anybody can make application for the benefits anticipated, or as of July 1, 1953. Such being the case, with the effective and the cut-off dates being nearly simultaneous, it is altogether possible for the new Congress to hold further hearings next year and draft new amendments, if found desirable, before the effective date July 1, 1953.

Section 3 of this bill, as finally enacted provides that disability determinations as anticipated, shall be made by a state agency "pursuant to agreements entered into with the Federal Security Administrator, rather than the Federal Government, but as stated above, the net result of the bill's language by compromise will lead to much confusion the way it is now set up. Quoting from the Law, in repetition, thus "Provision is made that no application for the purposes of section 3 shall be accepted prior to July 1, 1953, with a final sentence of the section providing that all of the provisions included therein shall cease to be in effect as of June 30, 1953." One can then see that the net result of this anomalous wording will be to provide for an expiration date of section 3 on the day preceding the acceptable date for receiving applications from the Old-agers and Survivors. It would suggest, therefore, that further legislative action must be taken before such provisions can be made workable, or adopted into permanent law. Perhaps Congress, in passing the law with

such ambiguity, just before its adjournment, has tied a ribbon around one of its fingers for the purpose of reminding itself that hearings should be held on this entire matter sometime before June 30, 1953, for the purpose of adjudicating proper administration of this act. If so, representatives of the A.M.A. will be there as an interested party in helping Congress decide how evidence of permanent disability should be obtained, who will obtain it, under what circumstances and by whom, and whether or not provisions as contained under section 3 should be adopted at all permanently.

The House of Delegates again emphasized by adoption of a resolution its desire that Congress adopt the features contained in the revised Keogh-Reed Pension Bills for physicians, lawyers, farmers, and other types of the self-employeed. These bills, which would establish a voluntary pension plan for the self employed, including physicians, have been revised considerably, and the authors of the bills feel that these bipartisans bills will be passed eventually. In this report, it seems advisable to list the new features of the revised bills, the ones introduced by Mr. Keogh and by Mr. Reed are identical, so these revisions apply to both HR 8390 and HR 8391. They are as follows (1) A lifetime limit of $150,000 on the total amount which an eligible taxpayer could exclude from taxable income for the purpose of saving for his old age; (2) eligible taxpayers now over age 55 could exclude more than the limits of $7,500 or 10 per cent of earned income, whichever is the lesser; (3) only the self-employed and persons not covered by private or public employer-employee pension plans are eligible; (4) the amounts excluded from current taxable income could be invested either in a restricted trust fund or a restricted retirement annuity issued by an insurance company; (5) a carry-over of unused exclusions for a period of not more than five years; and (6) no withdrawals until age 65 (changed from age 60) unless totally disabled for more than three months.

In addition to adopting a resolution supporting the leadership of the AMA on the President's Commission on the Health Needs of the Nation and defending its stand on Section 3 of H.B. 7800, stating that this is a "flagrant attempt to railroad thru congress a provision to aid the socialization of medicine", thru extension of the "power and authority of the Federal Security Administrator", the House of Delegates adopted further resolutions on other questions of national significance, as follows: (1) voted organizational neutrality in Presidental or other political campaigns, but urged doctors to take an active part in political affairs of their communities, state and nation, (2) supported proposed amendments to the United States Constitution whereby Congress will be limited with a ceiling upon its Federal taxing power; (3) endorsed the move to restrict the treaty-making authority of the President of the United States; (4) it rejected by resolution Senate Bill 1140, which would provide for a Federal Department of Health, and suggested instead, the formation of a Board of Hospitalization as a coordinating body. It is of interest to note that one week previously, the Senate Committee on Govrnment Operations did spike S.B. 1140, and voted to support S.B. 3514 which would set up a Federal Board of Hospitalization. Policy level conferences will be held between the AMA and the American Legion, two organizations that support the plan, advocated by S.B. 3314, in principle.

The House also approved the report of the National Educational Campaign Committee of the AMA which recommended its dissolution at the end of 1952, and separation of Whitaker and Baxter at the same time, "barring a reversal in the general elections in November of this year." It adopted also, a proposal by one of the delegates, who is a member of the President's Commission on the Health Needs of the Nation, that the AMA set up its own commission on national health needs to carry on the work that will be terminated by the Magnuson commission upon dissolution at the end of this year.

The special committee of the House, known as the Federal Medical Service Committee, made a progress report, lacking in specific recommendations, on its study of two important matters, namely, medical and hospital benefits for dependents of servicemen, and for war veterans having non-service-connected disabilities. No further action was taken in urging governmental utilization of Blue Cross and Blue Shield plans for medical care of dependents. Further reports by this important committee are anticipated at the December Clinical Session at Denver in December.

The report of the AMA Committee on Blood

Banks was adopted. For the future, the report invokes a new survey of the nation's blood banks to be done this fall, it states that plasma processing plants are not being supplied to capacity, it endorses the non-profit policy in the distribution of whole blood, and urges this be continued meticulously, and calls attention to the fact that some variation is understandable in service charges made by hospitals and blood banks, and calls attention to the "extremes of charges now observed seem inexplicable", and if there is any profit making it should be stopped. The report emphasized the importance of blood procurement programs *receiving the approval of the local or state medical societies*, and stressed that efforts should be made to avoid friction in borderline areas between two existing programs.

Previously, the House of Delegates had approved the appointment by the Board of Trustees of a special advisory committee of lay persons to consult with them on matters requiring opinions of non-medical leaders in American business life. At this session, the House approved the creation of any number of advisory bodies by the Board in accordance with the needs, These bodies will be named to serve on special projects or programs in the future, and if the members wish, will serve anonymously, in order that they might be spared publicity or pressure.

Upon suggestion of the retiring President, Dr. Cline, the House authorized the Board of Trustees to name a committee to consult with the American Osteopathic Association, with particular reference to utilization of M.D.'s as instructors in schools of osteopathy.

At the present time, it seems that a number of doctors of medicine are serving as teachers in these schools, altho such duties are in violation of the AMA's code of ethics. It is anticipated that the Committee of the Board will also discuss means and methods of assisting schools of osteopathy in their teaching programs, certification of their hospitals, and other matters of mutual interest, providing, of course, that the Osteopathic profession is receptive to this friendly gesture.

Other matters in brief adopted, as follows.

1. Dues of the AMA will be twenty-five dollars continued for next year.

2. Fellowship in the AMA finally abolished, henceforth only one type of membership will prevail, that as a member of the AMA.

3. A move for certification of clinical psychologists was rejected, and the question referred to the Council on Medical Education and Hospitals.

4. A group of identical resolutions urging establishment of a specialty board in microbiology failed of approval. The House accepted the reference committe's report of disapproval based on the premise that American specialty boards should be for MD's alone.

5. A resolution dealing with the eligibility of Negro physicians for membership in state and local medical societies was referred to the Board of Trustees, not voted upon by the House.

Your Delegates had the pleasure in company with our Executives Secretary, Mr. Robert Carpenter, of attending all sessions of the House of Delegates, as well as serving on the Reference Committee on Reports of the Board of Trustees and Secretary; besides attending several meetings of the Council on Medical Service, of which he is a member.

Respectfully submitted
J. D. Hamer, M.D., Phoenix ,Arizona


## SITUATIONS WANTED

**GENERAL SURGEON — desires congenial association individual or group in Arizona. Well trained, experienced all phases general surgery. Just finished five years' residency; Part I Board; three years' general practice; five years' Army; Industrious, amicable, willing to work. Married; 39; Catholic. Eager to establish home in permanent location. Desire interview.**

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THE HOSPITAL BENEFIT Bulletin

Special Published Bi-Monthly by the Hospital Benefit Association, First Street at Willetta, Phoenix August, 1952

**Question QUIZ**
**Do you know the answers?**

**Q. What must doctors do to receive HBA payment for surgical bill fees?**

A. Simply fill out and send the Association a convenient HBA bill form which is available for this purpose.

**Q. Must anesthetists send the HBA a bill for services?**

A. Definitely. Otherwise the Association will make payment on the assumption that the operation lasted no more than one hour.

**Q. How frequently does the HBA pay doctors' bills?**

A. Every working day of every month so that physicians will not have to wait for their fees.

**Q. How long does it take for doctors to receive their fees?**

A. When information is complete and the patient's membership is in order, all bills are paid within five days.

**Q. Can doctors help speed up HBA payment for their fees?**

A. Yes— by promptly billing the Association and by giving necessary data in standard medical nomenclature.

**Q. What standard does the HBA use in paying surgical fees?**

A. It was taken from the Arizona Industrial Commission's schedule of surgical benefits.

**Q. Do HBA members have a free choice of doctors and hospitals?**

A. Yes. Association members may go to any licensed physician (M. D.) or hospital anywhere in the world.

# Anesthetists and Surgeons Can Help Speed Payments By Prompt Billing to HBA

## Faster Statements From Physicians Means Faster Pay From Association

The Hospital Benefit Association is doing everything possible to maintain its long-standing policy of paying surgeons' and anesthetists' fees promptly—with a minimum amount of "paper work" for doctors. Recently the Association's Underwriting Department was expanded in our new Phoenix location for just this purpose.

Doctors themselves can help us maintain this record—and thus receive speedy payment for their services—by promptly sending the Association their bills together with the information needed to process claims.

Surgeons need only to fill out a simplified HBA bill form which is available for this purpose. It lists all needed information, and past experience shows that additional data is neded only in 3% to 4% of the total claims handled.

Anesthetists, especially, can speed up full payment for their services by sending us a statement showing the patient's name, his HBA Membership Number, the service rendered, and the fee. Unless we receive this statement directly, the Association must assume that the operation lasted no longer than one hour.

### HBA Pays Every Working Day.

Payments are made every working day of every month so that doctors won't have to wait for their fees. And no bill remains in our office more than five days if statements are complete and the patient's membership is in order.

It helps everyone when we get all bills promptly and all bills on one claim can be paid at the same time.

The Hospital Benefit Association automatically sends a statement form to the patient to be given to the surgeon. However, many doctors prefer to keep a supply on hand. We will be glad to send them to you. Write us at either First Street at Willetta, Phoenix, or 706 Valley National Bldg., Tucson.

Our policy of prompt payment brings satisfaction to doctors and our members, alike. And, obviously, the greater the satisfaction brought by plans like the Hospital Benefit Association, the less chance socialized medicine has of succeeding.

## Physicians' Use Of Standard Nomenclature Avoids Paying Delay

The schedule of Surgical Benefits of the Hospital Benefit Association was taken from the schedule of the Arizona Industrial Commission.

If the physician uses the same wording as this schedule in filling out the Association's bill form, any question of eligibility is eliminated and payments can be made without delay.

However, if an operation is performed that is not listed in the schedule, the Association requests physicians to use standard medical nomenclature when their statements are submitted. This, too, will cut down on delays caused by lack of information.

**REQUESTED BY THE F.B.I. THAT WE PRINT THE FOLLOWING:**



**CLARENCE GEORGE SUTHERLAND**

**White, male, born—6/9/12, Peoria, Illinois, Height 5'10" to 6' Weight 175 to 210 lbs. Build—Heavy with erect carriage and broad shoulders, Hair—Black, curly, graying at temples, Eyes—Brown, Complexion—Dark, Occupation—Used Car Salesman, Clerk, Truck Driver.**

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CLARENCE GEORGE SUTHERLAND, while employed as a Used Car Salesman, Ft. Lauderdale, Florida, took a 1949 Chrysler Windsor Convertible from the owner under an agreement to sell at the used car lot where he was employed and, if not sold within 10 days, it would be returned to the owner. The automobile was never placed on the lot and SUTHERLAND, accompanied by a girl friend, traveled in the car to Atlanta, Georgia, In July of 1950. At Atlanta, SUTHERLAND abandoned the girl and disappeared with the car.

On August 4, 1950, a Federal complaint was filed at Miami, Florida, charging SUTHERLAND with the interstate transportation of a stolen motor vehicle. SUTHERLAND has no known prior criminal record.

SUTHERLAND was inducted into the United States Army, December 7, 1943, at Chicago, Illinois. He received a disability discharge on April 4, 1944, because of asthma and was declared totally unfit for military service. To date no record has been located of his having received treatment at a Veterans Hospital. It is believed he may have sought private treatment in view of his being wanted.

SUTHERLAND is described as white, male, age 40, born June 9, 1912, Peoria, Illinois, height 5'10" to 6', weight 175 to 210 lbs., build heavy with erect carriage and broad shoulders, hair black, curly, graying at temples, eyes brown, complexion dark, occupation Used Car Salesman, Clerk, Truck driver.

Any person having information which may assist in locating SUTHERLAND is requested to immediately notify the Director of the Federal Bureau of Investigation, United States Department of Justice, Washington, D. C., or the Special Agent in Charge of the division of the Federal Bureau of Investigation nearest his city, the address and telephone number of which appear in the front pages of the local telephone directory.

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## INAUGURAL ADDRESS

There is probably no moment more earnestly sobering than stepping into a responsible position, and realizing fully that upon us has been placed the privilege as well as the responsibility of an organization.

We are an Auxiliary to a parent organization set up just 30 years ago to extend the aims of the medical profession to all organizations which look to the advancement of health and health education; also to cultivate friendliness among the families of the medical profession to insure a unity in our lives. Our purpose has not changed, but the magnitude has.

Our American heritage, priceless beyond question, gives us certain rights as individuals. We share the obligation to guard these attributes zealously.

The evolution of human society produces the need for each of us to give of ourselves in an individual way. The union of such giving has helped this Auxiliary to accomplish its present position as a truly worthy organization in American Society.

In the progression of our growth we gather knowledge, one from another, as to how work may be done to better advantage. Through ACTIVE MEMBERSHIP, the individual learns to know the needs of the local group, local groups carry through in aiding the State effort, and the State groups join to form one integral Auxiliary capable, at this point, of meeting National needs.

The scope of work to be done is unsuspected by many. It opens an opportunity for every member, and every eligible member, in the expression of its interests and its goals.

During this year's work may we enjoy the giving of our time and effort toward attaining those objectives outlined for us—may each doctor's wife alert and conscious of her direct responsibility as a unit, merge, so willingly and generously into the total that those objectives are completed, and ever remembered as noble accomplishments in human relations.

The program for the year titled "Working Together for Health," as outlined for National, increases in its requirements, the obligations on each local and State unit. It asks that our interest and participation in Nurse Recruitment be continued and increased; it requests cooperation with Civil Defense Promotion; it emphasizes due consideration on all Public Health issues in so far as we are able to encompass them; it encourages a current knowledge of Auxiliary work through factual and usable information obtainable in the Bulletin, Today's Health, and Arizona Medicine.

Speaking for the new Board and myself, we join you and freely give to you our cooperation this year. I trust that with all of our unified efforts we may prove worthy of the faith shown in us by the Arizona Medical Association.

Ruth E. Schoffman
State President, Phoenix, Arizona

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## Industrial Relations Committee 1952 Annual Report

During this fiscal year, the Industrial Relations Committee appointed by our President, Dr. Southworth, has consisted of two general surgeons, Dr. Carl H. Gans of Morenci and Dr. Zenas B. Noon of Nogales; one psychiatrist, Dr. William B. McGrath of Phoenix; and two orthopedic surgeons, Dr. John R. Schwarzmann of Tucson and myself. When this report was written on March 5, 1952, this committee had met for a full day each month for six months in an effort to revise the fee schedule of the Industrial Commission of Arizona in order to make this fee schedule more complete, more fitting to present economic conditions, and to correct some definite irregularities existing in the old fee schedule which became effective June 1, 1947. A further report on this phase of the activities of the Industrial Relations Committee will be given at the general sessions of the annual meeting of the Arizona Medical Association, Inc.

This committee has arbitrated several minor disputes between members of this association and the Industrial Commission of Arizona regarding prices charged by the former for care of Industrial Commission patients. These investigations have convinced this committee that most Industrial Commission bills are prepared by the doctor's secretary and that the billing forms are signed by the doctors without their reading or checking them. For example, certain doctor's secretaries have attempted to charge the Industrial Commission for blood transfusions which were given by hospital personnel, the attending physicians having no part in the procedure other than ordering it done. Such errors could be rectified by the doctors reading over the billing forms before signing them.

In a few cases, doctors have billed the Commission far in excess of the fee schedule for surgical procedures justifying this by relating excellence of their work which resulted in early restoration of the patient to full working status with minimal partial permanent disability. It is unfortunate that there is no provision for extra pay for such superb work, but *there is no such provision* so the fee must be as per schedule. That is the understanding when the doctor elects to take on an Industrial Commission case.

The above activities have been carried out by the Industrial Relations Committee which receives no remuneration. The members of this Industrial Relations Committee have also met on the average of at least one full day each month as the "Medical Advisory Board" of the Industrial Commission of Arizona, appointed by the Industrial Commission to review various medical cases presented to it by the Industrial Commission. For this service, the members of the Board receive payment from the Industrial Commission of Arizona. This Board has no power other than to advise the Industrial Commissioners of the medical facts pertaining to the various cases presented to it, and to give recommendations to promote the successful termination of such cases.

The members of the Board would like the other members of the Arizona Medical Association to know of the procedure used in examining patients presented to it. This is as follows:

About three or four weeks prior to the Next Medical Advisory Board Meeting, the Industrial Commission files containing the patient's medical record is sent to one of the members of the Board for review. This file contains the initial report of physician, progress records, results of X-ray examinations, consultations, hearings and letters sent by the attending physician to the Industrial Commission. This record is reviewed and the case is summarized and any special examinations or medical studies such as X-ray examinations are ordered. At the Medical Advisory Board Meeting the doctor reads his summary of the case to the other members of the Board who also go over the medical record if they wish. The patient is called in to give additional details of his injury, treatment, progress, present complaints, etc., and this is recorded exactly as given by the patient by a medical stenographer and is included in the report to the Industrial Commission. The patient is then examined, first by one or both of the two general surgeons, then by one or both of the two orthopedic surgeons and then by the psychiatrist. These examinations are recorded. Then, results of special studies, such as X-ray films are examined and additional studies are ordered as indicated. If the Board feels that further examination by other doctors is indicated, such recommendations are made. If the Board feels that further special examinations are pertinent, such examinations are ordered. Following this, the data is correlated and recommendations are made

to the Industrial Commission. After the report has been types, it is read, corrected and the Board members sign it. Since this may require several weeks, a copy of the conclusions of the consultation is types and signed the day of the Board meeting so that the Industrial Commission may see the recommendations immediately. The reason why this Board wants the members of the Arizona Medical Association to know in detail how Board examinations are conducted is to suggest that those members of the Association who find it necessary to disagree with the Board should study the records and the patients as carefully as the Board has before drawing any conclusions. On a number of occasions, the Board has found that members of the Association will petition the Industrial Commission of Arizona to reopen a case that the Board has recommended to be closed, submitting no medical reasons at all to justify it. The members of this Board are human and are liable to err so that your assistance in obtaining the true medical facts is appreciated. The members of the Association will assist their patients most if they keep the Industrial Commission fully informed, not only of the patient's physical condition, but also of other data pertinent to the case, such as cooperation of the patient to treatment and patient's response to treatment. If the members of this Association feel that the recommendations made by the Medical Advisory Board are incorrect and should not be carried out, it would be most helpful to the patient if a letter would be sent to the Commission outlining wherein the Board was in error and why the treatment or management of the case recommended by the Board was improper. The Board realizes that their examination of the patient which may last an hour to an hour and a half may fail to reveal physical abnormalities which might manifest themselves on some other occasion and be absent during the Board meeting. It is for this reason that the members of this Association will render their patients real service in keeping the Industrial Commission fully informed.

This Board feels that more than one-half of the patients seen by it have abnormalities of attitude which have delayed their recovery. For this reason, it recommends that physicians attending Industrial patients pay more attention to their mental attitude, their cooperation to medical treatment and what other mental and emotional factors may be pertinent to the case. If a case that should make a recovery in a few weeks or months, fails to make this anticipated recovery, this Board feels that the case should be seen by a competent psychiatrist for recommendations regarding the need for psychiatric treatment or for other advice which will result in early recovery of the patient. In many cases, the best treatment is early discharge of the patient. We continue to see many patients who have been treated for one or two years and have obvious abnormal mental conditions who have never seen a psychiatrist prior to submitting to examination by the Medical Advisory Board.

We feel that the laws of the State of Arizona pertaining to the Industrial Commission should be changed so that more scheduled disability ratings may be given and so that patients may receive the benefit of general disability ratings regardless of subsequent working status. At the present time, a patient may receive a scheduled disability rating only if he has sustained a partial loss of one limb or one organ such as an eye. In that case, he may receive at the termination of his treatment, payments for a number of months to partially compensate him for his loss. An industrious patient with functional loss of two extremities is penalized since two extremities are involved, he must be given a general disability rating. In this case, if he obtains a job which will pay him more than the general disability rating, the Industrial Commission is not obligated to pay him anything. To make this more clear, suppose that a man sustains below-knee amputations of both legs, that he ultimately recovers and is fitted with satisfactory artificial limbs. If he would have received in jury to only one limb, he could receive a partial permanent disability rating equivalent to a 100% functional loss of the involved leg for which he would receive disability payments for a number of months. However, since both legs were involved, then, he must receive a general disability rating. If he obtains a job which will pay him more than the general disability rating, the Industrial Commission does not have to pay him anything. In other words, the present law encourages individuals who have received injuries which involve the back or two extremities not to seek gainful employment, since, if they do succeed in obtaining work which they can do, the disability benefits will be terminated. Almost everyone who has had

occasion to study present methods of disposing of patients with a disability rating feel that the present situation is bad, but no one seems to have done anything about it as far as this Committee can learn. Should our Legislative Committee take action? Should this Committee enlist the aid of politicians? Certainly both employers and employees would be benefited by either a change of the law or a change in the interpretation of the laws by the Supreme Court. The former method of accomplishing the result would seem to be the better since if the law were clearer, the Supreme Court could not misinterpret it.

When considering changes in the laws pertaining to the Industrial Commission, it would be well for the legal terminology to be changed so that it would correspond to medical terminology. At present "leg" means "lower extremity" distal to hip joint; an "arm" means an "upper extremity" distal to shoulder joint; and a "fourth finger" is articulated to the "fifth metacarpal.'

The members of this Committee are becoming increasingly disturbed by the number of Industrial patients who are treated by individuals not members of this Medical Association, who describe their patient's injuries as consisting of dislocations and subluxations of the spine without establishing this diagnosis by means of an X-ray examination or any other means except by pre-conceived theory. We feel that medical practitioners ought not to describe abnormalities which they claim to be due to industrial injuries, but which cannot be substantiated by X-ray examinations or by other medical evidence which would appear reasonable. After such practitioners tell patients that their "spines slip out of place", it is extremely difficult to convince them that this is not true particularly if the "slipped vertebra" gives them a continuation of disability with 65% of wages, tax free and all medical bills paid. This Board feels that the Industrial Commission should insist upon having its medical work done by the best available practitioners and that poorly educated individuals should not be permitted to treat Industrial patients.

This Board thanks Dr. Southworth for having appointed it, the Industrial Commissioners for having backed the medical opinions rendered by it, and the members of the Arizona State Medical Association, Inc. for their tolerance and cooperation.

Ronald S. Haines, M.D., Chairman, Phoenix

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## NATIONAL ADVISORY COMMITTEE TO SELECTIVE SERVICE SYSTEM

Information Bulletin Volume III, No. 5

Subject: Clarification of Calls By Priorities

Some phases of the operations under Public Law 779 by the Department of Defense and the Health Resources Advisory Committee to the Office of Defense Mobilization on the one hand and the Selective Service System and the National Advisory Committee for the selection of physicians, dentists, and allied specialists on the other have led to misunderstanding on the part of some as to the sequence of Call. It is hoped that the following statements will help to clarify the present situation.

I—*No priority II special registrant or reserve officers has been called to active duty since priority I's are still available, either in the reserves or among the special registrants. There are two groups which are exceptions to this:*

(1) *Those reserve officers who were members of organized reserve units which are exempted from the agreement between the Health Resources Advisory Committee and the Department of Defense;*

(2) *Those Priority II reserve officers who applied for immediate active duty at the time they accepted their commissions.*

II—The impression which has been gained by some that Priority II reserve officers have been called is due to the fact that those in Priority I who have failed to apply for and accept commissions have remained in civilian life, while those who were more willing and applied for and accepted commisions have been serving in the Armed Forces. A statement in regard to this group from the chairman of the Armed Forces Medical Policy Council, Melvin A. Casberg, M.D., is reproduced herewith:

"When all Priority I type reserves have been called to active duty, or deferred for acceptable reasons, the Selective Service System will be requested to bring the remaining Priority I registrants into service before any Priority II reserves are called up. It is anticipated that this will occur within the next six months. Hence, the recalcitrant ones are only delaying their service until all the Priority I registrants who have accepted commissions are called up."

III—Any instance of a call of a Priority II special registrant or reserve officer should be reported immediately, since such calls are in error. In many such instances, however, it develops that the registrant or reservist was in error concerning his true priority classification.

IV—The time is now approaching when we are beginning to reach the end of Priority I in both the reserve and registrant groups. This will occur in the very near future as far as dentists are concerned. Therefore the following step is now necessary:

V—*All Priority I dentists who have been classified in Class II-A (essential) should be reviewed at once and as many as possible made available before the impending call for Priority II dentists among those Priority II registrants.*

VI—Priority II registrants will be called on the basis of the length of their previous service. Such calls will, of course, be paralleled by Calls on Priority II reserve officers.

VII—It should be noted that the Navy is the only one of the three Services which has any large pool of Priority II reserve officers.

VIII—Similarly, a review of Priority I registrants who are physicians and who are currently deferred should be a continuing process since it may become necessary to begin calling Priority II physician registrants toward the end of this calendar year, or shortly thereafter.

IX—*These procedures must be carefully followed if the orderly operations of the Department of Defense, the Office of Defense Mobilization and the Selective Service System in implementing Public Law 779 are to be maintained.*

(NOTE: Copies of this bulletin have been prepared and distributed for your information.)

Joseph M. Greer, M.D., Chairman
Arizona Advisory Committee to the
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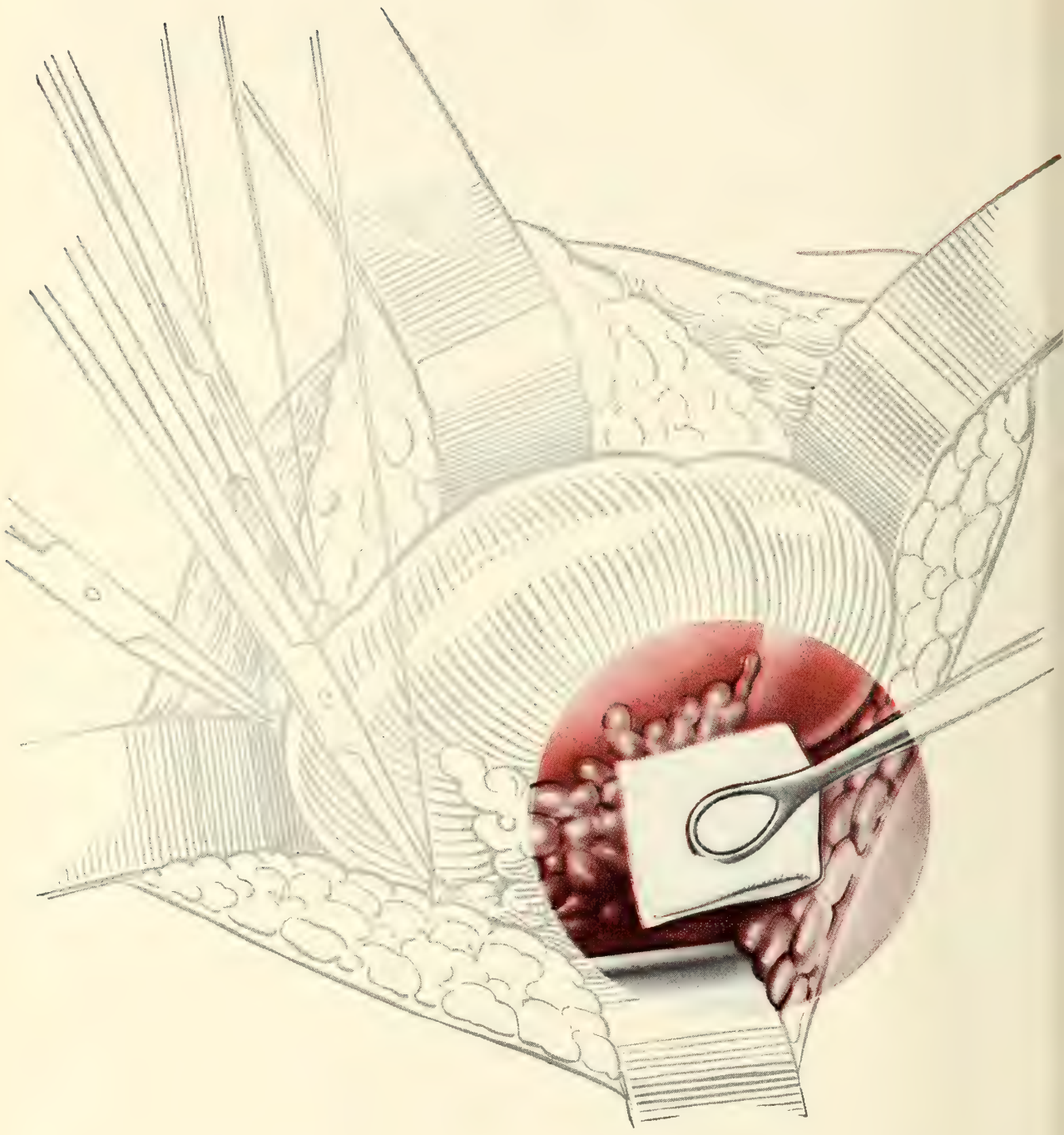


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*Journal of* ARIZONA MEDICAL ASSOCIATION

VOL. 9, NO. 9 SEPTEMBER, 1952


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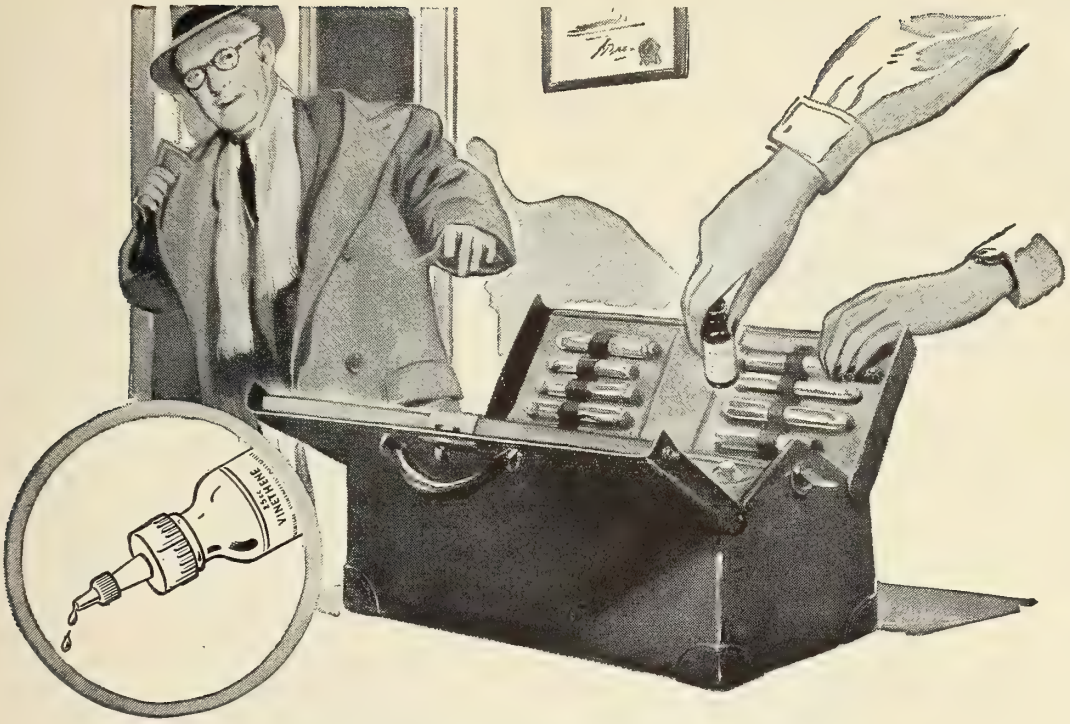
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2. Heller, E. M.: The Treatment of Essential Hypertension. *Canad. Med. Assn. Jour.*, 61:293, Sept., 1949.

*Author unidentified. From Mencken, H. L.: A New Dictionary of Quotations. New York, Alfred A. Knopf, 1942, p. 1057.


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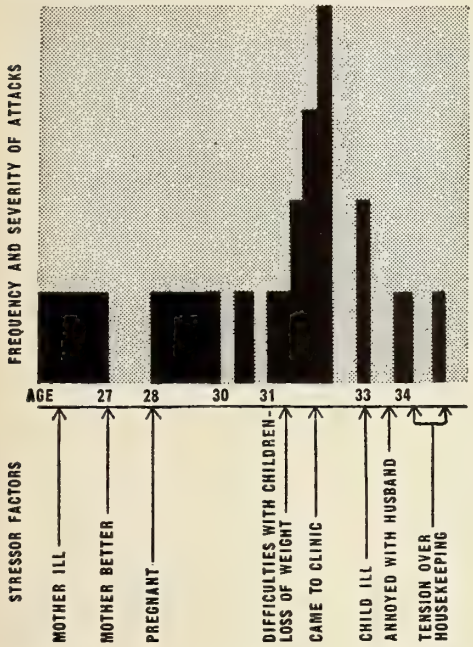
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[1] *Cleghorn, R. A. and Graham, B. F.: Recent Progress in Hormone Research, Vol. IV, New York, Academic Press, Inc., 1949, p. 323.*

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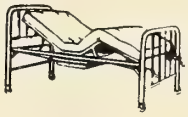
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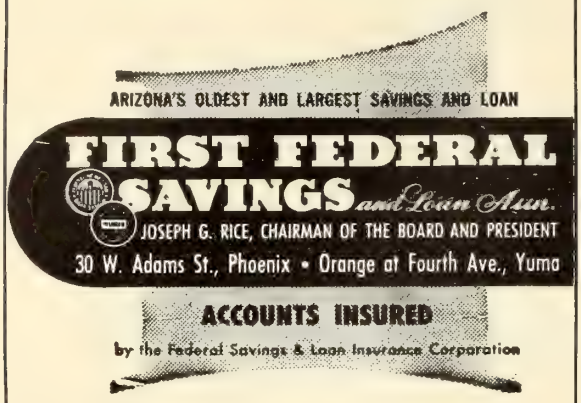



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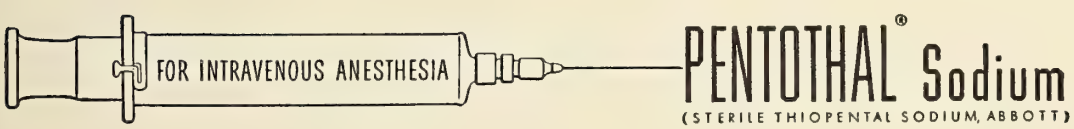


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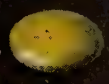
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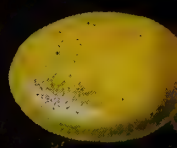
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ARIZONA MEDICINE
Journal of Arizona Medical Association

VOL. 9, NO. 9 SEPTEMBER, 1952

# Original ARTICLES

## THE MANAGEMENT OF URETERAL CALCULI

W. G. Shultz, M .D., F.A.C.S,

Tucson, Arizona

My reasons for giving this presentation are (1) a fairly high incidence of calculi in our area and (2) poor management may result in irreparable damage or loss of a kidney or even, in rare instances, a life. The problem is a flexible one and the methods of dealing with it must also be.

One should be skilled in the use of all instruments and methods, and his choice should be determined by a thorough knowledge of the conditions operating in each particular case.

We have frequently seen a patint writhing in agony with a typical attack of what seems unquestionably ureteral colic due to a calculus, only to find it difficult or impossible to demonstrate a calculus because it is so small; but in other cases accidentally find, while looking for something else, that a patient has a large ureteral calculus, already in the lower end of his ureter, who has been so unaware of pain as not to suspect any real physical difficulty, certainly not a stone in the ureter.

For the purpose of this discussion I shall consider (1) the small or medium sized mildly obstructing calculi; (2) the small or medium sized seriously obstructing calculi; (3) the old impacted calculi; (4) the large calculi considered too large to pass through the intramural portion of the ureter, all four classes with or without serious superimposed infection.

The small or medium sized mildly obstructing calculus without infection will usually pass without intervention. The patient may be given fluids freely, a mild sedative, and permitted to carry on his normal activities. However, a careful supervision should be carried out and if the calculus is not passed, and recovered, follow-up studies should be done as the calculus may impact and without symptoms enlarge to a point that it cannot be removed by any except open operative measures, and may result in considerable damage to the attendant kidney. In case infection supervenes, suitable measures should be immediately instituted to combat the infection and remove the calculus. These measures are the same as for the small or medium sized, seriously obstructing calculus; namely, administration of your favorite urinary antiseptic. I would suggest the combination of penicillin and dihydrostreptomycin unless cultures and sensitivity tests have already been done and suggest another more suitable medication. If the calculus is in the lower one-third of the ureter, I suggest removal of the calculus by one of the manipulative methods later desrcibed in this article, followed by catheter drainage of the affected kidney. If these methods are unsuccessful, of course, open operative approach is advisable and in the presence of infection must be done early. The simple passage of a ureteral catheter will overcome the obstruction, afford immediate relief of pain, and establish drainage which is of primary importance in treating infection anywhere. This, in conjunction with appropriate urinary antiseptics and forcing of fluids, may produce complete subsidence of the infection and if it is possible to leave the catheter indwelling for a suitable period of time, the calculus may pass spontaneously after its removal.

Read before Sixty-first Annual Meeting of Arizona Medical Association, May 1, 1952.

For removal of calculi in the lower one-third of the ureter I prefer to use the Council basket with a medium length filiform (Figs. 1 & 2) if possible to pass it, as it permits complete and adequate dilatation of the intramural portion of the ureter, as well as the ureteral meatus, and also helps prevent difficulty in bringing the calculus through these areas after it becomes engaged. The Council as stated has the advantage of dilatation of the intramural portion of the ureter (Fig. 2), however, its disadvantage is that the instrument may pass the calculus in front and in such manner that it is impossible to engage it because it cannot enter the basket at the back side through the closely meshed wires. The Robinson stone dislodger (Fig. 3) is made with only four wires, permits dilatation of the intramural portion of the ureter to a fair extent, and will still permit, the calculus to enter it from any side; therefore, it will frequently be successful where the Council fails. The Johnson stone basket (Fig. 4) readily admits entrance of the calculus but does not permit manual dilatation, and, therefore, once the calculus is engaged it must be withdrawn without the assistance of dilatation, and is more prone to result in damage to the ureter or ureteral meatus. Ureteral meatotomy may, of course, be combined with any of the above instruments to assist in extraction of the calculus. A small calculus impacted in the intramural portion of the ureter may be engaged in any of the above baskets, or it may be forced back into the dilated portion of the ureter where it is more easily picked up. However, frequently a calculus impacted in this region may not permit the passage of any instrument including catheter due to the edema or stenosis. Ureteral meatotomy in such cases may be of no avail as an aid to passing the instrument. However, ureteral meatotomy, once the calculus is impacted in the intramural portion, may be all that is necessary to make it possible by manipulation between the beak of the instrument in the bladder and the finger in the vagina, in the female, or in the rectum in the male, to express the calculus out of the lower ureter. Where the basket has been introducd and manipulative efforts have failed as in Figs. 1, 2, 3, & 4 a ureteral catheter should be passed to the renal pelvis and left indwelling for forty-eight hours or more if possible. However, in this case it was impossible to pass a ureteral catheter, but the dilatation of the intramural portion of the ureter, plus a meatotomy were apparently adequate and the calculus was passed uneventfully a few days later. All such cases must be carefully supervised and immediate surgical intervention carried out if obstructive damage or/ and infection supervenes.

In case of the old impacted calculus that has been in its location for a long time, peri-ureteritis and fibrosis has taken place, and it may have become so imbedded that manipulative procedures will be unsuccessful and ureterolithotomy may be necessary. However, if not too large, a preoperative cystoscopic effort is justifiable. Large calculi above 2 cm. in diameter at any site in the ureter usually should be approached by open operation.

In the upper two-thirds of the ureter, baskets should not be used in an effort to remove the calculi in any case, but in the small or medium sized calculi with marked obstruction, ureteral catheterization, multiple ureteral catheterization, or the loop catheter may frequently bring about passage of the calculus without complications, and obviate the necessity for surgical intervention.

## – CASE REPORTS –

A few cases are now presented which do not show complete success from manipulative measures, but illustrate some of the points brought out in this presentation. The hospital records will show the successes and I can assure you that they constitute a good 95%.

Case No. 1: This patient had a calculus approximately 1 cm. x 2 cm. in size which had become impacted in his lower left ureter. Infection had developed and the patient had been allowed to remain in this condition for too long a period of time before help was sought. This was before the day of our wonder drugs. A catheter was passed beyond this calculus and considerable symptomatic relief obtained. A great deal of peri-ureteritis was present. His temperature and general condition did not improve with drainage, and it was felt that a left nephrectomy might be necessary. However, it was decided to do an operative approach to this calculus which was done through an extraperitoneal abdominal operation. The calculus was removed from the lower end of the ureter. The progress of the patient was such that a nephrectomy had to be done the following day. At the time of nephrectomy the kidney was

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**Upper left—Council basket passed by a calculus in intramural portion of ureter. Calculus appears in lower end and would seem to be in the basket. Such is not the case. Upper right—The Council basket in open position dilating the intramural portion of the ureter. Lower left—Robinson stone dislodger in use in the same case. Lower right—Johnson stone basket likewise in use in the same case.**

found to be very friable, and while I was reaching for a renal pedicle clamp, the kidney pulled loose from its pedicle in the hands of my assistant. A perfectly dry laporotomy sponge folded twice, was grasped, and the renal pedicle compressed against the vertebral column with this sponge by manual pressure. It was held for five minutes during which time no bleeding occurred. The sponge was then removed, no hemorrhage ensued, the renal fossa was emptied of blood clots, a rubber dam drain was placed in the renal fossa, no effort was made to locate and ligate the renal pedicle, and the incision was closed in the usual manner. This procedure as you probably know is purported to have first been done in France, has been done numerous times since, and the only complication which followed this particular procedure, was my loss of sleep for the next few nights.

Case No. 2 is a man sixty-one years of age when he first reported to me. His case does not fall entirely within the province of this presentation, but it does illustrate the manner in which some of the manipulative measures are combined to aid in the management of various cases. At his first visit (Fig. 11) the right kidney contained four large calculi and a group of sand. The left kidney contained three cal-

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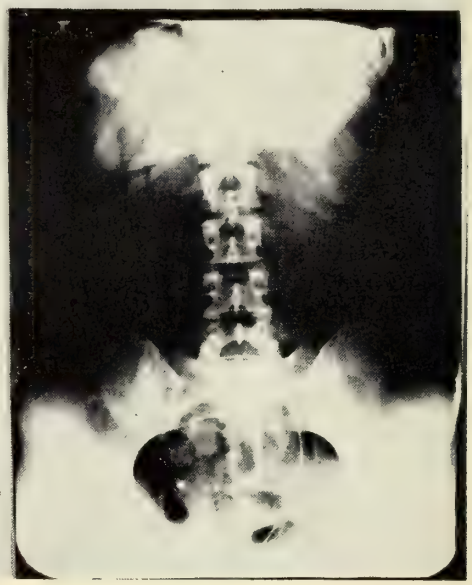
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**Upper left—Two calculi in the upper end of the ureter which appear as one since they are so close together . Upper right—Calculi pushed back into the renal pelvis. Lower left—One calculi now in renal pelvis and one again in the upper ureter. Lower right—These two calculi enclosed in a loop catheter and drawn down to about the mid portion of the ureter.**

culi and a group of sand. The lower left ureter contained two fairly large groups of calculi, the lower right ureter contained one large group of calculi, and there was a calculus in the urinary bladder. This patient had prostatic obstruction. A resectoscope was used, and the calculus removed from the urinary bladder. The prostate was then removed by resection. The calculi were removed from both the lower right and left ureters, by doing a ureteral meatotomy on both sides and manipulating the calculi out of the lower ureters. The patient's urine was changed from an alkaline one to an acid one and during the next five years he passed a considerable amount of sand. His x-rays (Fig. 12) five years later show that the left kidney contained one small calculus, the right two fairly large calculi, but the balance of the urinary tract was free of calculi.

Case No. 3: This case illustrates the use of the loop catheter. Fig. 5 shows two calculi in the upper ureter although they are so close together that they appear as one. A California urologist attempted to aid in their passage by the use of multiple catheters. Fig. 6 shows that these two calculi have been pushed back into the renal pelvis by this procedure. Subsequently, Fig. 7 shows that one of these calculi

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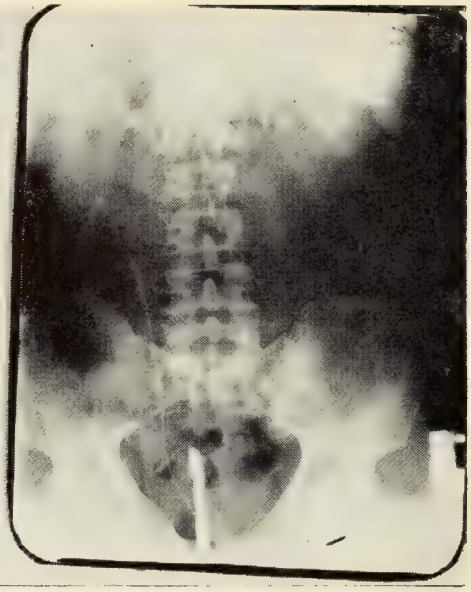
**Upper left—They are now in the lower one-third of the ureter. Upper right—The same two calculi at a still lower position in the ureter where they were dropped by too much tension on the catheter. Lower left—The right kidney contains four large calculi and a group of sand. The left kidney three calculi and a group of sand. The lower left ureter contains two fairly large groups of calculi. The lower right ureter contains one large group of calculi, and there is a calculus in the urinary bladder. Lower right—Same patient five years later now shows one small calculus in left kidney. The right conatins two fairly large calculi. The balance of the urinary tract is free of calculi.**

has come down again into the uper third of the ureter. The other still remains in the renal pelvis. About this time the patient left California and came to Arizona, and the x-ray examination here showed the calculi to occupy this same position. The patient had considerable trouble with urinary infection, recurrent, which was controlled each time with urinary antiseptics. One calculus being in the ureter and the other in the kidney posed a problem. She was advised that if they were both back in the ureter in their original position a surgical approach through the loin to this portion of the ureter would be made for their removal. A reasonable period of time was permitted for this to occur, but since it did not it was decided to make an attempt with the loop catheter to see if the one calculus in the ureter could be obtained. Therefore, a loop catheter was passed to the renal pelvis and a loop made. It was drawn down into the ureter and an x-ray showed that it had picked up both calculi. Fig. 8 shows that these had been brought down to the mid portion of the ureter and with gentle pressure they were brought down still further, and Fig. 9 shows that they are now in

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14



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**Upper left—Shows loop made in kidney pelvis and calculus opposite the body of the fourth lumbar vertebra. Upper right—Shows this loop brought down to and engaging the calculus. Lower left—Shows Bransford Lewis ureteral dilator accidentally acting as a forcep grasping ureteral calculus.**

the lower one-third of the ureter. At this point so much traction was being exerted that the loop was straightening out and it was felt that these calculi would be dropped. Therefore, the ureteral catheter was fastened to her thigh with elastic traction, and after twenty-four hours it was found that the catheter had become quite loose. Therefore, gentle traction was made on it and I considered reattaching the elastic traction to the catheter, but inadvertently exerted a little too much force and felt the catheter come away. X-ray (Fig. 10) disclosed that it had dropped the two calculi in the lower most portion of the ureter. Numerous attempts were made with catheters and baskets to get by these calculi in hopes of engaging them. Nothing could be passed by them. Therefore, an extraperitoneal approach to the ureter was done and a ureterolithotomy performed with successful removal of both calculi. Numerous adhesions were found in the region of the calculi and it was felt that, that portion of the ureter had ben involved in previous inflammatory reaction following pelvic surgery. This patient's progress has been quite satisfactory since that time although she requires dilatations of her lower ureter and lavage of the renal pelvis on this side.

Case No. 4: Briefly I would like to report another case in which the loop catheter is used. A single small irregularly shaped calculus had blocked at the beginning of the mid portion of the ureter just opposite the transverse process of the fourth lumbar vertebra. A loop catheter was passed to the renal pelvis and the loop made (Fig. 13). This loop was then gradually withdrawn and (Fig. 14) shows it engaging the calculus for removal.

Case No. 5: Thi spatient had an impacted ureteral calculus in the lower one-third of her ureter approximately 1 cm. x 2 cm. in size, and reported to me in 1923. A Bransford Lewis dilator was used to dilate the ureter up to the calculus. When the calculus was reached and efforts at dilatation continued the jaws of the dilator accidentally, and unintentionally, were forced by the calculus in such manner that it became engaged in them as shown in Fig. 15. All efforts to disengage this instrument from the calculus failed. The ureteral walls held it

tightly clamped against the calculus and it was slowly brought down to the intramural portion of the ureter. I still made numerous attempts to drop the calculus, but these were unsuccessful. A ureteral meatotomy was done and the calculus removed still firmly clamped within the jaws of the dilator. Fortunately, the post operative progress of this patient was uneventful. Ain't nature grand!

– COMMENT –

Contra-indications for use of manipulative measures: (1) Where the calculus is relatively small in comparison to the ureter, complete obstruction or infection are not present, and the calculus seems liable to pass spontaneously. (2) The aged. (3) Prostatitis, hypertrophy or carcinoma of the prostate, epididymitis. (4) Infected hydro-ureteral nephrosis above the calculus. A careful preoperative effort to obtain a calculus does no harm and may prevent a ureteral lithotomy, in a patient who may in the future have another calculus passing through the same channel. The improper application of any instrument may end in poor results and in justly deserved criticism. This, of course, is a general statement which may be applied as a deserved criticism against all procedures, improperly applied by the surgeon, or any investigator in any field. Prolonged and determined efforts with any of the described methods are likely to cause excessive trauma to the ureter, thereby increasing spasm, obstruction, infection, and leading to complete failure. In the event of failure to relieve the obstruction one must choose between further observation, with the possibility of spontaneous passage of the calculus, or surgical removal. In the presence of infection one must proceed with caution and very excellent judgment as well as very close supervision. Prompt action when surgery becomes indicated cannot be over-emphasized and unnecessary delay at this time, will result in serious and possibly irreparable damage to the kidney.

## CARCINOMA OF THE BREAST: DIAGNOSIS AND FACTORS DETERMINING PROGNOSIS AND TREATMENT

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Cancer of the female breast, second ranking cause of mortality from cancer in American women, continues its upward trend of incidence and mortality which first became evident early in this century. Even in the decade just past, with more general application of radical surgery by an increasing number of well-trained surgeons throughout the country, and with increasing emphasis on "early" diagnosis and "early" treatment, the death rate from mammary cancer continues its gradual but inexorable rise. That this increase is only partially due to an increase in the aging fraction of the population is shown by age-adjusted statistics. In Connectciut, for example, a State where there has been a highly dveloped cancer control program for some 20 years, the age-adjusted mortality rates per 100,000 for breast cancer for 1937 and 1948 were, respectively, in the order of 30 and 37.

At present the annual mortality from mammary cancer in the United States verges on 19,000. There are, at any time, over 70,000 current cases, a factor of 3.5 indicating rather accurately the ratio of mortality to morbidity in this disease.

Because we lack a more exact serologic or other approach, early diagnosis of breast cancer rests on meticulous physical examination of the woman whose complaint is of the breast. Proper examination demands individual development of a strict, painstaking routine in which all four quadrants and the subareolar area of each breast are meticulously surveyed, both in the siting and supine positions. Breast contour, nipple level, areolar retraction or distortion, and early skin changes with the arms in varying positions are features requiring careful review. Palpation of axillary, supraclavicular, and cervical lymphnodal areas is of extreme prognostic importance. Complete physical examination is mandatory, of course, with emphasis on pelvic and rectal examination for not infrequent instances of concomitant gynecologic pathology.

In the strictest sense, there is only one cardinal objective in clinical exacmination of the female breast: to determine or to exclude the presence of a space-occupying, three-dimensional tumor. If such a tumor is present, the physician has

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reached the limit of *exact*, tactile diagnosis. It then becomes his responsibility to advise, and the patient's to accept, early biopsy and histologic examination. This holds true both for small tumors of debatable nature and large tumors clinically consistent with carcinoma, for even the elect may mistake fat necrosis, for example, for cancer. Further, even in obviously advanced and inoperable breast cancer, a biopsy should be performed before palliative treatment, either radiological or medical, is instituted.

Of every 100 women whose complaint is of the breast, approximately 60 will be found to have some phase of the condition generally (and inaccurately) referred to as cystic disease or mastitis, 20 will be proved to have cancer, perhaps 15 will exhibit a fibroadenoma, and the remaining 5 will represent the *curiosae mammae*, such as traumatic fat necrosis, plasma cell mastitis, tuberculosis, and a few rare tumors such as lipomata, chondromata, and so forth. Thus the most frequent problem in early diagnosis is the distinction between the variegated changes in mammary consistency which characterize cystic disease and the physical features of a distinct, space-occupying, or true, lump in the breast. Accuracy in differentiating between true and false lumps in the breast comes from that high pitch of tactile sensitivity, or *tactus eruditus*, which can be acquired only by experience.

Many unnecessary explorations and biopsies of the breast are done because of the physician's failure to recognize the historical features and physical criteria of cystic disease. The rhythmic periodicity of premenstrual soreness and tenderness of the breasts in cystic disease is its most frequent symptom. Unhappily, early cancer of the breast is rarely symptomatic and requires objective identification of a nontender mass. Many patients with cystic disease will present areas of apparent induration during the premenstrual phase of their cycle, and reexamination of the areas a week or so after menstruation will prove their evanescent or false nature. These are the patients who may provide an unhappy experience in the operating room for the surgeon who is unable to find the "tumor" he discovered during an examination in the florid premenstrual phase.

An invaluable aid in the recording of breast lesions generally is a diagrammatic representation of the breasts and regional nodal areas stamped or drawn on the chart, with the lesions accurately indicated by location and size according to actual measurement. If an area of induration in the breast does not completely regress in the postmenstrual phase, but by measurement exhibits distinct decrease in size, it is almost certainly non-neoplastic and requires observation only. Contrariwise, any distinct area of three dimensional induration which fails to regress postmenstrually, or even increases in size, must be excised, for women with cystic disease have a slightly higher than average incidence of mammary carcinoma.

There are two processes of involution which produce space-occupying lesions in cystic disease. One is the development of gross cysts of such size as to be palpable. They may be firm or even hard in consistency because of the tension of the intracystic fluid, and their surface is smooth, their outline sharply demarcated, and their mobility usually notable. I believe it is proper to aspirate such cysts with a 14 gauge needle and to attempt to empty the cyst completely. If there is no rseidual mass after aspiration, in 7 out of 10 patients the cyst will not refill and excisional surgery is unnecessary. If residual induration is palpable after aspiration, or if a cyst has refilled on reexamination four weeks later, excision is indicated. A small percentage of gross cysts develop neoplastic changes in their epithelial lining.

The other process producing a true lump in cystic disease is a sclerosing stromal involution, or sclerosing adenomatosis. In extreme instances the scirrhous effect is so pronounced as to produce a breast tumor indistinguishable from carcinoma, including skin attachment. The sclerosing phase simply produces a true tumor which requires excision for differentiation from cancer.

Other diagnostic aids have not been of any great value. In the author's experience, transillumination does not provide enough information to justify the procedure, and at times it can be highly misleading. Intraductal injection of radioppaque materials is not without hazard and is certainly unsuitable for more than occasional use. Accurately taken, soft tissue films of the dependent breast may be helpful in occasional instances.

An unusual form of cancer of the breast is a sarcomatous process developed in a pre-existing fibroadenoma, in which the fibroblastic stro-

mal component of this compound neoplasm produces a fibrosarcoma. Usually seen in younger women, or at least in middle life, it commonly produces a very bulky tumor without skin attachment or regional nodal involvement, and constitutes a lobulated soft to firm mass entirely unlike carcinoma.

The natural history of untreated carcinoma of the breast forms a baseline against which the results of our therapeutic efforts to modify the disease should be compared, a fact too often disregarded in clinical reporting of end results. Survival rates for untreated carcinoma of the breast, from time of diagnosis, are as follows:

| | |
|---|---|
| 3 years | 40% |
| 5 years | 22% |
| 10 years | 5% |

These rates are, of course survival, with disease, of the untreated cases, but it should be remembered that a few individuals and institutions also report end results in terms of survival, with and without disease. Such figures should be reduced by deducting the percentage which would have survived without treatment. Thus, a 5-year survival rate of 44% for carcinoma of the breast is, in fact, only a 22% increase in survival over the untreated, natural course of the disease.

"Cure" rates, or, more accurately, control rates, are of much greater significance, if they are based on total experience and not biased by statistical trickery. A 5-year control rate of 44% means that 44 of 100 patients treated have reached the 5 year mark without clinical evidence of recurrence or metastasis, as compared to 0% of untreated patients.

Failure to recognize the difference between clinical control and sheer survival has led some "ivory tower" statisticians to adopt a dismal view of surgical end results in cancer of the breast. Statistical evidence relating the duration of mammary cancer to its local and regional extent is as yet only a measurement of how soon a patient seks advice on the basis of a recognized abnormality, and it may be that present figures represent degrees of abnormality as a function of time, rather than any reflection of the true natural history of the disease. Nor will there be any reliable evidence on the value of early treatment until a sufficient sample of patients has come to adequate treatment solely on the basis of objective recognition of asymptomatic mammary tumors known to be of short duration. Apart from any statistical concept of "absolute" cures, the long term control of mammary carcinoma by surgical methods, both radical and palliative, is of inestimable value to society. Recurrent or metastatic disease developing 10 to 15 years after treatment may represent therapeutic failures to the statistician, and survival "with", or "without", disease for shorter periods of time may seem similar when plotted on a graph. To the clinician, however, "salvage" such as this is significant and rewarding. To the patient, and to society, it is the difference between nihilism and som measure of successful control while we await the development of more effective therapeutic methods.

A reverse attitude now current in some surgical centers, in extension of radical surgery beyond the limits of the conventional Halsted-Meyer procedure, arouses no vestige of entrusiasm in this observer. Thirty years ago Simkin was combining a radical supraclavicular dissection with radical mastectomy, and his end results were no better than with the conventional operation. There is no possible reason to believe that the modern exponents of superradicalism in this particular type of cancer will fare any better. If the neoplastic process has gone beyond the anatomic limits of curability by conventional radical mastectomy, such extension is almost inevitably evdeince of its lethal nature and of still wider dissemination beyond any possible operative areas. When the presence of metastases in the apical axillary lymph nodes is an almost invariable indication of incurability, the effort to remove disease even more proximal, by resecting ribs, sternum and clavicle, is little more than surgical exhibitionism. The same reasoning invalidates proposals for wider removal of skin with routine grafting, reflection of skin-thickness flaps and extensive dissections with operative periods up to 5 and 6 hours. In spite of these refinements Haagensen, their principal advocate, reports 5-year end results no better than most, and not as good as some surgeons, and his rate of local recurrences remains constant at 12% to 13%.

Opposing the disciples of super-radicalism are a few therapists who are moving in the direction of surgical conservatism. Most notable of these is McWhirter, who reports 5-year end results equalling those from radical mastectomy, by simple mastectomy with x-ray therapy to

the regional lymphnodal areas. Because of the natural history of mammary carcinoma, and the late recurrences possible in irradiated tissue, a comparison of end results at 10 years will be necessary to judge more adequately the value of McWhirter's program. In the meantime, his plan of treatment should be regarded as a clinical investigative project which requires further verification, and not as an indication for the abandonment of radical mastectomy as the definitive curative measure for carcinoma of the breast. A further deterring factor is that the necessarily intensive irradiation, particularly in younger women, is not without some hazard of late radiation damage.

These various modifications of conventional surgical treatment are an indication of our dissatisfaction with our inability to improve end results in this form of cancer. Much of this therapeutic frustration arises from the fact that we are dealing with a disease in which the prognosis in most patients is predetermined by a tumor-host relationship of unknown nature. This biological predeterminism is established at the very inception of the neoplastic process, long before it is capable of producing signs or symptoms. In general, therefore, natural selection is a more important determinant of end results than is early treatment. Present evidence indicates that the diversity of biological potential is such that 3 general groups can be recognized. Perhaps 40 out of every 100 patients represent an unfavorable process which is incurable regardless of time or type of treatment, while in another 25 the disease is so dilatory that regional matastases do not occur until 3 years or more after recognization of the primary lesion. In the remaining group of 35, regional metastases seem to occur during the months immediately following recognition of the breast tumor. It is this latter group in whom ablative surgical treatment, promptly employed, may yet improve significantly our end results. For this group, as well as for the indolent even though locally advanced lesions, radical mastectomy offers the only definitive prospect of control and cure of the disease.

Treatment of breast cancer calls for a high degree of judgment in selection of methods based on multiple features in each patient. As in the treatment of neoplastic diseases, generally, there are no flat rules which can be followed with slavish uniformity without prejudice to certain patients. Two fundamnetal features require careful evaluation in every patient. The first, commonly recognized as the feature of greatest import, is the clinical stage of the disease. The second, and hardly less significant though commonly ignored, is the necessity of a clinical evaluation of the growth pattern of the neoplasm. The breast is one of the most arresting examples of an organ site in which cancer exhibits a wide range of polymorphism. The vagaries of growth pattern in breast cancer range from the uniformly lethal, rapidly growing, inflammatory carcinoma of the breast to the dilatory, low grade sort of neoplasm which may produce local ulceration after 10 or more years of growth without evidence of even regional metastases.

In some 15 per cent of patients, however, there will be historical and clinical evidence pointing to a highly malignant, aggressive growth pattern, and these patients constitute a biologically inoperable group even though some of them are technically operable. The most dramatic fraction of these patients are readily recognizable as inflammatory carcinoma, found in approximately 4 per cent of all patients. These patients present a process so florid as to be mistaken frequently for acute mastitis. The remainder of the biologically incurable group usually presents other less dramatic evidence—a rapidly enlarging tumor, lymphedema of the skin disproportionate to the size of the tumor, some degree of cutaneous erythema, increased skin temperature, satellite skin nodules, extensiv axillary lymphnodal involvement with a primary tumor of small size or short duration.

The obverse of this situation, more often seen in elderly women, is characterized by a tumor of long duration, slow growth, minimum or no axillary nodal involvement, and absence of clinical or radiographic evidence of distant metastases. Such patients are frequently eligible for radical surgery with an excellent chance for cure but are denied their chance because of the extent of the local disease or because ulceration is present.

In view of these considerations, an outline for treatment can be formulated which will recognize thre clinical stages of the disease, with the intermediate stage subdivided into two groups:

Stage I. Limited to the breast, with skin involvement zero or minimum (early attachment or slight dimpling immediately over the tumor).

Stage II. (a) Clinical evidence of metastases to axillary nodes, with enlarged nodes 2 cm. or less in diameter, and discrete, with no involvement of apical nodes. (b) Avillary nodes larger than 2 cm. Axillary nodes adherent to each other or to the skin. Apical axillary nodes involved. More than minimum skin involvement, up to and including ulceration.

Stage III. Distant metastases, which includes spread to the supraclaixcular nodes.

Treatment of Stages I and III offers little difficulty, In Stage I radical mastectomy constitutes definitive treatment, and if microscopic examination fails to show axillary nodal metastases, no irradiation is indicated.

In Stage III, various combinations of x-radiation, steroid hormone therapy and palliative surgery frequently produce effective palliation for years rather than months. Unless the disease is too generalized, x-ray treatment is still more effective than are steroid hormones, with the exception of soft tissue disease in post-menopausal women, where the usefulness of estrogenic steroids is outstanding.

Stage II disease offers the most difficult area of therapeutics, and here the factor of biologic evidence of curability should be examined together with technical considerations of operability. For a 5-year period the author pursued the policy of a therapeutic trial of x-ray therapy for all Stage II cases in an effort to filter out the highly malignant, biologically incurable neoplasms which are ordinarily highly radiosensitive. This plan has now been abandoned for several reasons: the small number of radiosensitive lesions (less than 15 per cent), several weeks of delay for the majority who do require radical surgery and delayed healing in those who had more than a therapeutic trial of irradiation and still came to radical mastectomy because of incomplete regression. We still believe, however, that patients with criteria of biologically unfavorable lesions as outlined above, either Staeg II-a or II-b, should have a trial of irradiation. The trial period is short in duration (two weeks), and the dosage moderate in amount (1200 roentgens to each of three ports). If the process is thereby shown to be distinctly radiosensitive as indicated by regression of 40 per cent or more by measurement, such a degree of radiosensitivity is accepted as evidence of biologic incurability and a full course of irradiation is employed. Those lesions not proving to be radiosensitive have prompt radical mastectomy.

As to the technical division of Stage II, groups a and b constitute the favorable and unfavorable examples respectively. Ordinarily, Stage II-a should be treated in the same fashion as Stage I, by immediate radical mastectomy. Stage II-b, particularly in the face of more advanced axillary disease, or satellite skin nodules, is of ominous import. Thus the postoperative 5-year control of Stage II-a is better than 50 per cent, whereas that for Stage II-b is little better than for untreated breast cancer, or about 25 per cent. Nevertheless there are Stage II-b cases, as indicated above, where the evidence of a low growth potential is such that, even with advanced local disease, there may be no distant metastases, and uniformly to deny such patients the chance afforded by radical surgery is to lose an appreciable fraction of potential cures.

There is, then, no formal outline possible for management of Stage II-b. In every instance treatment must be selected in the light of the total evidence of the behavior or natural history of the neoplasm and its host. It is self-evident that, in women with Stage II-b extension and evidence of an aggressive, rapidly-growing lesion, radical mastectomy is invariably a futile and unnecessary surgical gesture. For such patients, palliative irradiation is the primary and usually the only necessary modality. Patients with clinical evidence of a dilatory, slow-growing tumor may be treated best by primary surgery. Cases falling between these two extremes may obtain excellent palliation for a number of years by judicious combination of both methods.

Although the evidence is contradictory, we believe that patients with Stage II disease subjected to radical mastectomy should have postoperative x-ray therapy. Such postoperative irradiation is best directed toward the regional axillary and supraclavicular areas, and, in the instance of lesions located in the medial quadrants of the breast, irradiation of the mediastinal area should be added. If the surgical procedure has been adequate, there is no reason to irradiate the chest wall and underlying lung. If local recurrence does develop later, in an unirradiated chest wall, it is possible to employ effective focal palliative x-ray therapy.

## CONCLUSION

The clinician has two grave responsibilities in respect to the woman whose complaint is of the breast. Primarily, he must determine whether or not she presents a space-occupying,

or true, lump in the breast. If such a tumor be present, each patient's problem requires management based on the specific features peculiar to the individual rather than an adherence to any set of rules.

TABLE I

Approximate Incidence of Mammary Lesions

| | |
|---|---|
| Cystic Disease | 60% |
| Cancer | 20% |
| Fibroadenoma | 15% |
| Curiosae Mammae | 5% |

REFERENCES

1. Haagensen, C. D. and Stout, A. P. Carcinoma of the Breast. III. Results of Treatment, 1935-1942. Ann. Surg. 134: 151-172, August 1951.
2. Macdonald, I. Biological Predeterminism in Human Cancer Surg., Gyne. & Obst. 92: 443-452, April 1951.

# FRACTURES

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The title of this paper may seem to be a rash statement,—which needs verification. In the face of all the refinements of radiologic technic, making visible any of the hollow structures of the body, as well as many of the solid organs,—in such fields as angiography, encephalography, bronchography, pyelography, salpingo-uterography, and many others, the suggestion that the diagnosis of fractures is more difficult seems to call for a liberal sprinkling of salt. The belief is almost universal that any doctor can diagnose fractures; that, possibly, intricate procedures should be referred to the hospital where a qualified radiologist will carry them out, or to a radiologist in private practice,—but fractures,—nothing to it!

Much evidence could be offered in support of the statement as to the difficulty of correctly and accurately interpreting bone and other tissue changes produced by injury and shown by x-ray, but time will permit brief discussion of only four or five points.

1. The investigation of the skeletal system by means of its x-ray shadows requires a more detailed knowledge than does any other system in the body. This knowledge must cover not only the anatomy, but also the physiology and pathology of the bones and joints. Bone is ordinarily regarded as a fixed and stable tissue, subject to few, if any, changes after attaining full growth, unless injured. But this is a mistaken idea. Osseous tissue is quite labile, not only constantly changing during the growing years, but also subject to many variations in structure, density or contour throughout adult life and, finally, to senescent demineralization and the changes resulting therefrom. We do not ordinarily think of bone as having a physiology which needs to concern us. But the physiology of bone is almost as complicated as that of the liver, and knowledge of this, especially the physiology of bone repair, is necessary to the study of fractures by means of x-ray.

2. In the interpretation of x-ray findings following trauma, especially when adjacent to joints, a thorough knowledge of the peri-articular structures is necessary. The simple observation that a fracture is or is not shown, and if present, whether there is displacement of the fragments or not, is but the beginning of the radiologist's responsibility in examining the injured part. The character of the injury needs to be known to the radiologist and to be evaluated by him; that is, whether a strain, twist, direct blow, or a fall, and the direction and severity of the traumatic force applied. The radiologist has a mental image of the supporting ligaments about a joint and uses the information as to the kind and severity of the trauma to deduce what must have happened to those structures not directly shown on the x-ray film. For example, consider the examination of an ankle joint following an injury. Whether fracture is shown or not, consideration must be given to other possible injuries. From the nature of the injury, from the vulnerability of the soft tissues, from slight changes in joint spaces or joint relations, decision should be reached regarding the likelihood of rupture of ligaments supporting the ankle joint or diastasis of the tibio-fibular interosseous ligament. This latter is usually more serious and crippling, and less likely to undergo functional repair than fracture of the malleoli. Similar situations exist with regard to other extremity joints, where injury to supporting ligaments may be deduced from changes in soft tissue densities, or slight changes in joint spaces. More and more often comparative views of the opposite uninjured joints are required for accurate evaluation of a joint injury.

3. A knowledge of the physiology of bone repair is necessary in forecasting what is likely

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to happen following fracture of the shafts of long bones. Bone repair will take place chiefly, if not entirely, by proliferation of the osteoblasts of the periosteum. This is easily demonstrable in the distribution of callus two or three weeks after a fracture. If the fracture and displacement are of a character which must necessarily strip the periosteum from the surface of the broken shaft, and if this loose periosteum is not replaced in the reduction of the fragments, non-repair is very likely to result. Of course, these facts are well known to orthopedists and general surgeons who handle many fractures, but when fractures are being taken care of by general practioners, the radiologist may need to indicate whether the periosteum probably has been stripped back, and to issue a warning that union will be doubtful with closed manipulation, even when the fragments are reduced into good end to end position, as shown by x-ray.

4. A knowledge of the appearance of vascular channels in bones and of other normal lines which can simulate fracture, not only in the cranial bones but also in extremity bones, is a part of the radiologist's training, but often leads the infrequent observer into difficulty. This would seem to go without saying, but in one court case, based on a head injury, where the erroneous interpretation of the occipital suture as a fracture had been made, it required the combined testimony of most of the radiologists in Phoenix to convince the jury that this interpretation of a normal suture line was a mistake. Other cases have given trouble to the Industrial Commission, or have reached trial courts, with similar misinterpretations by general practitioners of vascular grooves or suture lines as fractures. It is exceedingly difficult ever to convince a patient who has had a diagnosis of fracture of the skull or spine, made on the basis of x-ray films, that such is not the case. Always the doctor who says there IS a fracture is right, no matter how inexperienced he may be in the interpretation of x-ray findings, and all doctors who say otherwise just do not know their business, no matter how expert and experienced they may be. This is human nature, and we cannot blame the patients.

It does not follow that a doctor must be a certified radiologist in order to make accurate interpretations of fractures or any other conditions which can be investigated by x-ray methods. Many orthopedists, industrial surgeons, and specialists in other fields can and do interpret x-ray findings in their limited specialties, and often as expertly as the radiologists do. The point aimed at in this paper is that fractures do not constitute a field in which just any doctor can feel himself competent. A urologist may be well versed in the minutiae of visualized pathology in the urinary tract and still be lost in studying the markings in the cranial vault, or a bone shadow which might or might not be a fracture. Likewise, the neurosurgeon may be expert in the interpretation of encephalograms, or the chest specialist in reading films of the lungs, and be wholly unqualified to say whether a cervical spine fracture is present or not.

Shortly after the establishment of the Industrial Commission of Arizona they adopted the policy that the Commission would pay for x-ray examinations only when these were made by doctors whose competency to interpret the findings had been established. This was the rule when the Industrial Relations Committee was formed. I served on this committee and as its secretary for eight years, and have records of actions by the Committee wherein they advised the Commission to refuse payment of bills submitted for x-ray examinations, because competency to make such examinations by the doctors involved had not been established. One practitioner in Phoenix installed an x-ray machine with the avowed expectation of reaping a harvest making x-ray examinations of his own industrial cases, only to be informed by the Commission that they would not honor his bills for those services. The Medical Referee of those days assembled a long list of mistakes in diagnosing bony anomalies as fractures, these errors being made by practitioners who were not familiar with the appearances on x-ray films of anatomical peculiarities and anomalous variations in the skeleton. Of late years the Commission seems to have relaxed this policy and the only required evidence of competency to make reports on x-ray examinations now appears to be the possession of an x-ray machine and the ability to employ a technician to turn out the films. They now accept the reports of any doctor who can write "M.D." after his name, and even from some osteopaths and chiropractors.

5. A final reason for this paper's contention has just been discussed in part. That is, the

occurrence of many bony anomalies, anatomical variations and individual peculiarities in the skeleton, which must be kept in mind by the radiologist and correctly evaluated by him. The anomalous bones of the wrist and foot were discussed by me in a paper published fifteen years ago. They continue to be troublesome and mistakes in interpreting them continue to come to our attention. The anomalies in the spine have been reported by many writers and are well known to radiologists, though not universally recognized by the infrequent observer. In the dorsal spine the juvenile epiphysitis of Scheuermann will often result in ununited epiphyses at the anterior angles of the vertbral bodies. This, along with the slight anterior wedging of these bodies due to the rounding of the spine, which is a part of the disease, has been misdiagnosed fracture on more than one occasion. In the lumbar spine the same thing occurs though usually without the wedging or rounding which is common in the dorsal area. Such ununited epiphyses on the lumbar vertebrae can be single or multiple. They are more likely to be confusing when single, and several instances of this anomaly have gone to industrial hearings, to the Medical Advisory Board, or to the Supreme Court, through mistaken diagnoses of this anomaly as fracture. Recently a case was being evaluated by the Industrial Commission, where such an ununited vertebral epiphysis had been diagnosed as fracture by an osteopathic x-ray interpreter, the patient placed in a cast and kept so for two months in an osteopathic hospital.

A somewhat similar condition is the os acetabuli, or separate epiphysis at the upper lip of the acetabulum. This comparatively frequent anomaly has given trouble on more than one occasion,—when first noted following a hip injury, especially a dislocation. In one industrial case, with persistent symptoms after a hip injury, surgical removal of the bony particle was attempted. This was not successful and the fragment was still present after the surgery. However, the surgery cured the symptoms!

It is manifestly impossible, in a short paper, to give many illustrations of the difficulty in negative or positive interpretation of fractures. Some have already been mentioned, and a few more will round out this paper.

In children any injury about a joint and involving the epiphyses can readily be missed, if the epiphyses are still in cartilage. However, careful attention to soft tissue densities with due consideration to the history and evident disability, along with comparative views of the uninjured side, will usually enable the radiologist to reach a conclusion as to whether or not an epiphysis, such as the internal epicondyle of the humerus, has been separated.

Of the supernumerary bones of the foot, the os trigonum, or separate posterior process of the talus, has given difficulty in many cases. That and the still ununited epiphysis of the proximal end of fifth metatarsal have often been mistaken for fractures in my experience. The subdivided sesamoid of great toe and the bipartite patella have been misdiagnosed as fracture in several instances which came later under my observation. In one notable case studied by the Industrial Relations Committee some years ago, a divided sesamoid of the great toe was removed surgically at considerable cost to the Industrial Commission for surgical fees, plus the compensations for disability which was, in the opinion of the Committee, due chiefly to the ill-advised surgery.

The injuries which cause me to scratch the head oftenest are those involving the hands and feet. I am convinced that there are bone injuries which leave the cortex intact, at least so far as routine views will show, and yet the interior structure of the bone may be disrupted and its cancellous tissue broken down. Usually in a March fracture, with films showing fine detail, a hairline fracture can be made out, but sometimes even this is not visible and the bone injury becomes manifest only after callus has formed in the healing process. The term "occult fracture" has been used in some reports and seems justified. Injuries at the ankle have been observed where the fine structural detail of the external malleolus is disrupted without a visible break in the cortex. In such cases, comparison views of the opposite normal ankle will show a difference in the structural bone detail. Meticulous care is required in making films to bring out the fine detail of the bone structure.

A hairline fracture through the lip of a phalanx at one of the interphalangeal articulations can easily be missed. On the other hand, a small sesamoid bone in the same localities can be misinterpreted as fracture.

The ulnar styloid existing as a separate bone, or remaining united after an old diastatic sepa-

ration sometimes presents a difficult problem. Anomalous bones distal to the malleoli are sources of considerable worry to the radiologist and to the attending surgeon, when a patient has sustained an ankle injury and there is a perfectly obvious bony fragment lying separate and just where the patient is most tender. That is the sort of situation which makes the radiologist's days interesting and his nights haunted by visions of possible mistakes.

The practitioner who thinks that a correct diagnosis regarding possible fracture should follow as a matter of course in any x-ray examination finds it difficult to excuse an error by a radiologist, in this field. However, I feel safer in interpretation of lung shadows, diagnosing ulcer of stomach or duodenum, drawing conclusions from pyelograms or cholecystograms, measuring the heart size or estimating pelvic diameters in a pregnant woman,—than I frequently do in saying whether there is or is not a fracture in many extremity, spine, rib or head examinations. So, be patient with the humble radiologist, if he says a mashed finger is not fractured and two weeks later revises his report, because callus developed!

## RADIATION THERAPY IN THE TREATMENT OF CARCINOMA OF THE CERVIX AND UTERUS

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Let us first define radiation. Radiations are divided into two main groups—(1) corpuscular and (2) electromagnetic. Corpuscular radiation is composed of particles such as electrons, protons, neutrons, helium nuclei or alpha particles, traveling in a stream. The chief sources of these as used in therapy are radioactive elements or isotopes; examples of the farmer being radium and examples of radioactive isotopes commonly used being P 32, I 131, and cobalt 60. For deep seated malignancy, the other sources, cyclotron and betatron. Alpha and beta particles are not used except experimently. Electro-magnetic radiation consists of wave motions traveling at the same speed as light, of the same nature as light, and differing only in the length of the waves.

I would like next to consider the way in which radiation acts. First let us consider radiation effects on the cell. The cell nucleus is affected more than the cytoplasm. Gross structural changes occur in the chromosomes and gene mutations are caused. Mitosis is arrested and degeneration may occur when the cell attempts division or even when it is in the resting stage. Differentiation may occur in resting cells. For example, cells irradiated in their resting period may react as follows: if the dose is sufficiently high some resting cells degenerate promptly; at lower doses the cell might degenerate on attempting division where it might be unable to initiate division in which case one or two alternatives occur. Either the cell enlarges grossly and ultimate dies, or it differentiates, in which case a more physiological death occurs. By any of these processes the active growth in irradiated tissue can be permanently arrested. The work done by Glucksman in 1941 on irradiated tumors showed that only those tumors hibited this as irradiation effect. Carcinoma of the cervix varies in the amount of initial differentiation which is present and varies in its response to radiation. We believe that if biopsy specimens are taken after treatment and show a rising proportion of differentiation of the cells and the absence of mitoses the prognosis is likely to be good. Death through differentiation does not occur in tumors which are normally undifferentiated, for example, basal cell carcinoma. However, such tumors are often radiosensitive. Serial biopsy has proven to be an important method of following the reaction of tumors to radiation. For example, in early cases without secondary nodes failure to respond might be taken as an indication for immediate change in the treatment. The next radiation effect on the cell is metabolic. As everyone knows the respiration of a malignant cell is entirely different from that of a benign cell. In regard to nucleoprotein metabolism it has been found that the site of breaks in the chromosomes of Drosophila melanogaster sperm following radiation is not random but that breaks occur with greater frequency in the deeper staining portion where desoxyribounucleic acid is concentrated. Radiation can alter

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the nucleic acid of the chromosomes, and this alteration is responsible for the stickiness of the chromosomes seen when the cell is irradiated during division. It has been shown that radioactive phosphorus (P 32) is taken up very rapidly by the nuclei of cells which divide frequently.

Factors which modify radiosensitivity are as follows: The dominant extrinsic factor is the circulation, the maximum effect being obtained in the presence of good circulation. Sensitivity is decreased with decrease in oxygen. Cold in most instances decreases sensitivity, probably by depressing respiration or mitosis. Other factors are as follows: the extension of overall time of administration diminishes the effect of radiation in most biological materials. The intervals between dosage fractions are important. That is, when radiation is given in divided doses thereby catching more and more cells during their mitoses. The most sensitive phase of the mitotic cycle seems to be the pro-phase or immediately preceding this period.

*Cancer of the cervix*

This is the second most common form of cancer in women, following breast. Jewish women who are not immune to other forms of cancer present a very low incidence of carcinoma of the cervix. It usually occurs in women who have borne children. The areas involved are as follows, in their order of frequency: posterior lip, before cervical canal, before anterior lip. The types are (1) ulcerating, (2) polypoid (which usually has the best prognosis) and (3) nodular. The spread of carcinoma of the cervix is in three distinct directions: (1) to the fornices and vaginal wall, (2) to the body of the uterus, and (3) to the parametria. It may invade the bladder, the rectovaginal septum, the vulva, uterosacral ligaments, etc. The lymphatic spread is to the external iliac nodes, inguinal, hypogastric, sacral and para-aortic nodes. Distant, blood borne metastases are not common but do occur. Histologically epidermoid carcinoma is the most common with adenocarcinoma amounting to less than five per cent of total occurrences. One method of classifying carcinoma of the cervix, clinically, is according to the League of Nations classification, as follows:

Stage I. Irrespective of size, character or secondary infection the tumor is strictly confined to the cervix.

Etage II. The parametrium is involved and infiltrated on either side but the involvement does not reach the pelvic wall and according to most authorities involves only the medial half. The vagina may be involved but not its lower third. The corpus of the uterus may be involved through the endometrial canal.

Stage III. The tumor invades the parametrium for its entire length on one or both sides and on rectal examination the examiner will be unable to place his finger between the tumor and the pelvic wall. The vagina is involved in its lower third. Isolated pelvic metastases against the pelvic wal, irrespective of the extent of the primary growth, are present. Pelvic lymph node metastases may be felt on rectal examination.

Stage IV. Frozen pelvis, or involvement of the bladder or rectovaginal septum, or the presence of distant metastases. Special examinations apart from biopsy of the lesion should include, when possible, pyelograms and cystoscopy. Numerous figures have been published on the results of therapy. I do not wish to belabor you with numerous statistics reported from various centers; suffice it to say, the prognosis in carcinoma of the cervix is bright, when compared to other primary carcinomas. The overall percentage for all four stages reported by some centers is as high as 35 per cent with an average for Stage I of 75 per cent, Stage II, 50 per cent, Stage III, 25 per cent and Stage IV, 5 per cent. It cannot be sufficiently emphasized that a Stage II carcinoma of the cervix has a better prognosis than an operable carcinoma of the stomach, which has a five year survival rate of less than five per cent. Some apparent Stage IV cases are actually so classified due to the presence of infection and inflammatory changes simulating a higher stage.

To return to the therapy of carcinoma of the cervix, carcinoma in situ, of course, can be treated either by radiation or surgery, a very difficult point being that it is difficult to truly evaluate whether the carcinoma is entirely confined to the cervix itself. Meigs of Boston has reported over 100 cases, carefully selected, in which he has, to the last of my knowledge, 100 per cent cures with no mortality. Stage II, III and IV are definitely radiation problems to begin with. However, one of the chief points of this paper is to bring forth the point that surgery with careful panhysterectomy *lymphadenectomy* can, in many cases, help these later

stages more than has been previously thought. Although the primary tumor of the cervix can be definitely eradicated by optimum irradiation, i. e., a combination of radium and x-ray therapy, I do not believe that malignant nodes distant from the cervix either in the lateral wall of the pelvis, bifurcation of the iliacs, or at the aorta, or even higher in the body, are usually sterilized, in the crossfire technique of irradiation the maximum dose is delivered to the carcinoma of the cervix itself with the normal tissues receiving a much less total dose of irradiation. This is difficult to do with nodes in the lateral wall of the pelvis or higher since the normal tissues will obtain a very high dosage and also since crossfire technique is not feasible. Many times a carcinoma of the cervix at the primary site has been cured to find that the patient dies of metastases at a later date. The patient may return for examination and the clinician finds the carcinoma cleared up locally, and yet the patient goes steadily downhill with metastases. For this reason I feel that the combination of radiation and surgery should be used whenever possible. Stage II or Stage III carcinoma of the cervix may be helped considerably by surgery following optimum radiation. Of course, the more drastic operation of Brunschwig or pelvic exenteration or evisceration can be resorted to and has been don successfully. I, therefore, hold no flaming torch to say that radiation is *the* treatment.

The science of irradiation in the treatment of carcinoma of the cervix and uterus has been greatly improved in recent years. X-ray dosage used to be given according to the number of minutes and even to the present radium dosage is often given in milligram hours. It used to be said that one could not add the roentgens or r of x-ray and radium since it was like adding oranges and lemons and trying to give a total in one or another. However, this has been disproven since both x-rays and gamma rays belong to the electromagnetic spectrum, the only difference being that with the usual type of x-rays available the wave length is much longer than that produced by radium, the latter being approximately equivalent to that produced by two million electron volts. X-rays being utilized in treatment are produced at from two hundred to four hundred kilovolts or even at a million volts. Some centers have, of course, the larger experimental machines of several million volts. The reason that these rays can be added quantitatively in dosage summation is the fact that after the first scatter of the ray in the tissue it has been proven scientifically that the wave length of radium's gamma rays approaches that of x-rays, and as far as we know, it is not the quality or wave length or frequency of the beam that matters as much as the actual dose absorbed by the tissues.

In treatment of carcinoma of the cervix let us consider the different points: Point A is at the paracervical triangle or where the uterine artery crosses the ureter and this area receives around 7000 r, adding gamma and x-ray r. Thus it is seen that with the cancericidal dose being approximately 6000 r this is quite adequate for the elimination of cancer at this point. Point B is on the lateral pelvic wall at the site of the obturator node. It receives much less than this, the total dose being less than cancericidal. However, the cervix itself receives from 10,000 to 15,000 r being the point of concentration of the therapy. Transvaginal or intravaginal therapy has been used by many centers and certainly can supplemen tthe dosage mainly to the cervix and to a lesser degree to the parametrium. However, I do feel that radium with its 2,000,000 volts quivalent type of electromagnetic wave is still the treatment of choice. May I say at this point if the patient has a large, cauliflower, fungating, infected lesion, external therapy should be given first to decrease the size of the tumor. However, if the tumor is ulcerating and radium can readily be applied, maximum dose can be given most quickly with radium therapy, and in this latter type, it is the method of choice in beginning therapy. Some of the complications arising are due to secondary infection such as a pelvic cellulitis, peritonitis, or pyometra. Pyometra may be present when therapy is begun. That arising during treatment, particularly with radium, indicates the immediate discontinuing of therapy and packing until drainage has been established and the patient has overcome the infection. As is well known one of the most common causes of death in carcinoma of the cervix is uremia, due to involvement of the urinary tract either by malignancy or to a lesser degree by radiation changes or both. Radiation sickness such as nausea with or without diarrhea does occur in some patients. The skin reaction is to be expected. I exhort you to refer to it as "reaction" rather than a "burn", since the former indicates an intentional

and normal change in the eyes of the public whereas the word "burn" seems to imply that too much radiation has been given, which is far from true. Factitious proctitis may occur with radiation therapy. Rectovaginal or vesicovaginal fistulae may occur either due to penetration by the carcinoma or due to radiation. Of course, in many instances carcinoma having involved the adjacent areas and being destroyed will naturally leave a dehiscence between the adjacent structures. Avascular changes in the femora with pathological fracture appear to be much less common than previously thought according to the experience of the big centers of therapy, the literature, and my own experience.

*Carcinoma of the cervix in pregnancy.*

In the first half of gestation the fetus should be sacrificed in the interest of the mother. When this decision is reached, treatment should be started by external deep therapy just as in carcinoma of the cervix in a non-pregnant uterus. After a period of four to six weeks a therapeutic abortion occurs in most cases. When this does not take place a dilation and curettage should be performed. At this stage when therapy is directed to protect the life of the child at the rick of the mother, it results often in the loss of the lives of both. During the second half of gestation, it is generally accepted that an effort can be made to preserve the life of the child without endangering the life of the mother, or without reducing appreciably her chances of survival. Procedure generally consists of preliminary intravaginal application of radium since the relative distance of the fetus from the cervix is greater than during early pregnancy. If the diagnosis of carcinoma is made during the 5th or 6th month of gestation it may be best to wait a month or six weeks before radium is applied. Following the application of radium a cesarean section should be done as soon as the child is viable; or radium may be applied while awaiting the viability of the child and then a cesarean performed followed by hysterectomy. If anyone has any doubts about this method of treatment I think the Golden Rule may be applied and consideration given to what one would do if the patient were one's wife or mother. Certainly, this would be of great help in deciding the best type of therapy indicated.

As for a few miscellaneous points in the therapy of carcinoma of the cervix the tandem with stem type of applicator and vaginal colpostats is the most common method used. Interstitial needles are being used at a few treatment centers.

*Carcinoma of the uterus.*

The lymphatic drainage of the uterus is quite similar to that of the cervix and terminates in the para-aortic, paracaval, external iliac and inguinal nodes. The classification of the extent of the disease is as follows:

Stage I. Tumor limited to the surface that has not yet invaded the muscle.

Stage II. Definite involvement of the myometrium.

Stage III. Invasion of the serosa.

Stage IV. Extension outside of the uterus.

The microscopic pathology finds adenocarcinoma the dominating type. There is, of course, rarely a sarcoma arising from a leimyoma. Grading of the pathological types are as follows:

I. Papillary adenoma which is a superficial growth and entirely papillary.

II. Adenoma malignum with no tendency to form solid masses or infiltrate the stroma.

III. Adenocarcinoma, solid masses, tendency to infiltration of the stroma.

IV. Embryonal, anaplastic, or diffuse carcinoma.

There is a rare adenocanthoma which represents mixed features of epidermoid carcinoma and adenocarcinoma. An additional clinical classification of Bowing and Frick is as follows:

Stage I. Uterus not enlarged and movable.

Stage II. Uterus enlarged but movable.

Stage III. Limited mobility, uterus enlarged and fixed with infiltration of the parametrium; uterus enlarged or not with involvement of the cervix.

Stage IV. Uterus enlarged and fixed with evidence of pelvic metastases.

I think everyone will agree that the essence of treatment of carcinoma of the fundus is surgery. The main point of difference is whether or not radiation should be used. It is true that different centers report different results. Heyman of Sweden initiated the multiple capsule method of radium application. This consists of small metal containers holding eight to ten milligrams of radium element with filter of approximately one millimeter equivalent of lead. These are retained on the ends of long, stiff wires, and are either numbered or lettered alphabetically, A, B, C, D. The uterus is packed with these

multiple capsules so that the ends of the wires and their letters, or numbers, protrude from the vagina. In the removal of these capsules one must start with the last one inserted or a "log-jam" will result. This gives a very homogeneous distribution of radiation to the malignancy and is preferable to external radiation except in thin patients. This multiple capsule method of radium exposes the malignancy to the equivalent of 2 x $10^6$ volt x-ray therapy in immedate juxtaposition. Some surgeons may say, "Why bother with irradiation at all before hysterectomy?" It is true that in Stage I or Stage II where the carcinoma is limited to the uterus irradiation is probably not necessary, but one cannot always be sure of the exact stage before surgery. However, radiation does tend to clean up any infection, obliterate lymphatics and possibly may convert a Stage III or Stage II into a lower stage. Of course, in the more advanced stages external radiation, as in Stage IV of the cervix, is a preferable method of treatment initially. Hysterectomy at the end of four weeks post radiation is the usual routine. Again I mention that radium inside the uterus is preferable, especially by the multiple capsule method, to external radiation since the dose is more homogeneous and more effective. Heyman found in a series of 698 cases that 52% were alive and without evidence of disease at the end of five years. In a series of 316 patients with his improved method 65% were alive and without evidence of disease at the end of five years. Ferris of the Division of Surgery of the Mayo Clinic at Rochester, Minnesota, has been using a combination of radium, x-rays and surgery, for the treatment of cancer of the fundus uteri.

To conclude, may I say that in the gloomy picture of carcinoma one of the brightest spots is found in the treatment of carcinoma of the cervix and uterus. Although the pendulum has been swinging from surgery to radiation, back and forth, over a number of years, the combination of the two, it is felt, will eventually prove to give the highest five year survival rate. Surgery for Stage I carcinoma of the cervix and for carcinoma of the fundus is well established. May I make the plea for surgery in case of carcinoma of the cervix, Stage II and III, when the primary site is apparently eradicated by radiation. Malignancy in the adjacent and peripheral lymph nodes still lurks and will spread and eventually kill the patient unless removed.

REFERENCES

1. Ackerman and del Regato: **Cancer, diagnosis, treatment and prognosis** (Mosby).
2. J. Heyman: **Radiotherapeutic treatment of cancer of the corpus.** British J. Radiology 20:85-91, March 1947.
3. Edwin C. Ernst, et al: **Panel on carcinoma of the uterine cervix.** Radiology June 1950.
4. Robert A. Kimbrough: **Treatment of carcinoma of the cervix.** S. G. & O. October 1948.
5. Herbert E. Schmitz: **Management of carcinoma of the cervix with emphasis on controversial factors of treatment.** Surgical Clinic of N. A., Feb. 1950.
6. Margaret C. Todd: **Optimum dosage on the treatment of cancer of cervix by radiation.** Acta Radiologica, Nov. 13, 1947.
7. Donaldson: **Distribution of radiation in the treatment of carcinoma of the cervix.** Acta Radiologica November 13, 1947.
8. Frank Buschke and Simian D. Cantrell: **Treatment of carcinoma of the uterine cervix, consideration on the 50th anniversary of the modified Wertheim operation.** Western J. of Surgery, March 1947.
9. Michael J. Jordan: **Advances in the treatment of carcinoma of the cervix.** Wisconsin Med. J., March 1950.
10. Herbert E. Schmitz, Janet E. Towne, Chas. J. Smith: **Role of surgery in the management of cervical carcinoma.** Radiology December 1950.

# PHOENIX *Clinical* CLUB

## MASSACHUSETTS GENERAL HOSPITAL CASE NO. 36322

**The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.**

*First admission.* An eleven-month-old boy was admitted to the hospital because of torticollis of about seven months' duration.

The patient was born uneventfully, without instruments, after seven hours' labor. The mother's health during pregnancy had been good. The infant appeared normal at birth, and his feeding and early development were normal. At about three or four months of age, it was first noted that the head was tilted to the left, with rotation of the chin to the right. This condition gradually became worse despite treatment with a supportive collar and passive stretching exercises.

The family history was noncontributory.

Physical examination showed the patient to be well developed and well nourished. The head was inclined to the left about 45° from

the vertical plane, and the chin was turned to the right. This posture was maintained on flexion and extension of the neck. The right sternocleidomastoid muscle was thin and lax, and the left was well developed and somewhat shortened but not especially tense. The left posterior neck muscles were likewise thought to be shortened. The spine and limbs were normal, as were the tendon jerks and the abdominal and plantar reflexes. There were no other physical or neurologic abnormalities.

The temperature, pulse and respirations were normal.

Examinations of the blood and urine were normal. X-ray films of the cervical spine showed questionable widening of the vertebral canal, but no other abnormality. Skull films were not entirely satisfactory but appeared normal. On lumbar puncture (on two occasions) clear cerebrospinal fluid under normal pressure was obtained. The fluid contained no cells and 71 mg. per 100 cc. of total protein. Electric stimulation showed the left sternocleidomastoid muscle to contract much more strongly than the right. Electromyograms showed constant activity in the left neck muscles but no evidence of a lesion of a lower motor neuron. Under general anesthesia movements of the cervical spine were found to be unrestricted. The optic disks and retinas, likewise examined at this time, were normal. Myelography wth iodized oil and with air disclosed no subarachnoid block and no abnormality of the spinal cord. An electroencephalogram was normal.

The patient was discharged with a corrective collar and recommendations for exercises and was followed in the Out Patient Department.

*Second admission* (three months later). The patient had remained in good health, but the abnormal posture of the head persisted unchanged. He was readmitted to the hospital for further study.

Physical examination showed the patient to be somewhat undersized and fretful and irritable. The tilting and rotation of the head were as before. He could walk only with assistance, with a broad-based, unsteady gait. He could stand unsupported but unsteadily. Physical and neurologic findings were otherwise unchanged.

Lumbar puncture demonstrated a clear fluid under a pressure equivalent to 200 mm. of water and containing 4 lymphocytes per cubic millimeter and a total protein of 160 mg. per 100 cc.

A repeat x-ray examination of the cervical spine showed no change. After several examinations, rendered difficult by the patient's inability to cooperate, it was decided that ocular fundi and eye movements were normal. Air myelography and pneumoencephalography were carried out. No abnormality of the cervical spinal canal or cord was seen. The lateral ventricles were considerably enlarged and the fourth ventricle was displaced forward of its normal position.

On the twenty-ninth day an operation was performed.

DR. JOHN A. EISENBEISS:

The case today concerns an 11-month old boy who presents rather typical symptoms suggesting a cerebellar or posterior fussa intracranial lesion which was of seven months' duration. The general summary of his history is nonrevealing with the exception of a torticollis which was first noted between three and four months of age. It was noted that the head was tilted to the left and the chin rotated to the righ. This is fairly suggestive of a left cerebellar lesion. Because of a suspected torticollis the patient was treated orthopedically with no benefit. Electromyographic studies revealed constant electrical activity in the left cervical muscles but no evidence of lower motor neuron lesion ruling out an anterior horn cell disease but not a compressive lesion of the upper cervical nerves or spinal accessory nerves. At the time of the original examination no abnormalities were noted by myelographic or pneumoencephalographic procedures and an electroencephalogram was normal. The x-rays which were obtained were not entirely satisfactory according to the protocol with the exception of questionable widening of the vertebral canal of the cervical spine and normal appearing skull films. Of interest in cerebellar tumors in children is the fact that the inion is frequently displaced upward. This was not mentioned as a negative finding. The one abnormality which should have and did arouse suspicion of an intracranial lesion was an elevated spinal fluid protein. Three months later the child was re-admitted for further study and definite evidence of progression of the posterior fossa lesion had developed. He now had difficulty in walking and typical cerebellar type of gait. In that the upper extremities were not involved, this is very suggestive of a midline

lesion of the vermis. In addition to this the spinal fluid had now changed in that the pressure was up and the protein had elevated to 160 mg., definitely suggesting block. Repeat x-rays were obtained and occular fundal examination was obtained. No significant findings were noted. Air myelography and pneumoencephalography was carried out and definite abnormality was noted showing displacement of the 4th centricle forward, again, consistant with a midline or vermis lesion.

It would appear to this examiner that there is little doubt but what this child has a posterior fossa neoplasm in spite of the absence of papilledema; in spite of no evidence of hydrocephalus other than that noted on pneumoencephalographic findings. I personally would have been a trifle hesitant to have done pneumoencephalography rather than a ventricle study with the spinal fluid pressure of 200. However, in the absence of papilledema it apparently was a safe procedure.

Of major import in the diagnosis of cerebral tumor in childhood or adulthood is a high suspicion factor, and because of the general opinion in the past in regard to the frequency of a cerebral tumor, this suspicion factor has been low in the general practitioner.

The older pediatrician regarded a brain tumor as a great rarity in infancy and early childhood, but because of more intensive study and the introduction of diagnostic aids such as arteriography and ventriculography which permit more accurate diagnosis it is now clear that brain tumors are almost as common in childhood as in adult life. Cushing's original figures suggested that but one sixth of all intracranial neoplasms occurred before the age of 15. Experience of neurosurgeons since this time suggests that this is a definite underestimate. Gliomas constitute about 75% of all intracranial tumors of childhood whereas they constitute approximately 40% of tumors in adult life. Approximately 65% of all brain tumors giving rise to symptoms before the age of 15 years are found in the cerebellum. It is of interest that during adult life the percentage of cerebellar tumors steadily falls and that of supratentorial or cerebral growths slowly rises, so that in old age cerebellar tumors are infrequent. General over-all ratio of brain tumors as to location is cerebral 5, pituitary 2, cerebellar 1, cerebellopontine angle 1, brain stem, 1/10th percent. The age distribution of gliomas in 0-15 about 80%; 15-30 years, 67%; 30-45 years approximately 95%; and 45-60 approximately 45%. The tumor type in the age group of 0-5 years is in order of frequency; astrocytoma, which is rather leisurely growing, the medulloblastoma, which is a rapidly growing tumor, the ependymoma, and hemangioblastoma, the latter being very rare in childhood. In the astrocytoma as a general rule the symptoms are of one year or more duration, prior to neurosurgical evaluation. Other conditions which must be considered in evaluating a posterior fossa lesion are platybasia or basilar impression which is unusual at this age, some of the degenerative diseases of the cerebellum such as Schilder's disease which seems most unlikly, neoplasms of the cranial nerves in this area neurofibroma of the 11th cranial nerve. Sarcomatosis of the meninges may occur in this age group and also inflamatory conditions. However, all of these I feel, can be ruled out and the question is which portion of the cerebellum is involved and what is the tumor type.

The first differentiation which must be made is whether or not this is an intracerebellar tumor or a surface lesion. From the course and history and findings noted on x-ray one must assume that this is an intracerebellar tumor.

Of the intracerebellar growths one must differentiate between a median and lateral growth. The symptomatology in the case under discussion today is most suggestive of a laterally placed growth, a growth involving the left cerebellar hemisphere. There are some findings which are not in accord with this supposition; namely, the ataxia involving both lower extremities and no mention of ataxia or cerebellar findings relevant to the upper extremities. The syndrome of the vermis is characterized by ataxia of both lower extremities, inconstant nystagmus of no localizing value and either hypotonia or hypermetria of both sides or one side alone. The laterally placed growths usually have findings which tend to localize the neoplasm to one or the other side. In the case under question the tilt of the head to the left and the rotation of the chin to the right are most suggestive of a left cerebellar hemisphere lesion. Apparently there was no evidence of nystagmus. As a general rule the nystagmus when present is slow and of larger amplitude when the eyes are deviated to the side of the lesion. The usual findings which occur late in the course of cere-

bellar tumors such as vomiting and headache and obvious hydrocephalus, suture separation on x-ray are not mentioned in the protocol. Some obstruction to the flow of spinal fluid must have occurred in the presence of the elevated protein.

The first symptom noted was the head tilted to the left. This was present 10 months prior to surgical procedure and is most consistent with a left cerebellar hemispheral lesion. The limitation of the ataxic manifestations as described in the protocol in the lower extremities suggests midline lesion. The elevation of cerebrospinal fluid pressure and the elevated protein suggest a neoplasm which is interfering with the circulation of the cerebrospinal fluid. The pneumoencephalographic studies as desscribed are consistant with midline tumor in the roof of the fourth ventricle. No mention is made of any deviation of the 4th ventricle in the anterior posterior projection which I am sure were taken. The differentiation of astrocytoma from medullo-blastoma or ependymoma or hemangioblastoma is most difficult. However, there are a few things in the protocol and in the duration of the patient's illness which might be of value in differentiating these four tumor types. First the absence of papilledema and the 10-month duration of illness prior to surgical intervention are against a medulloblastoma which is usually a more rapidly growing lesion. Generally other cranial nerves are involved by this neoplasm which tends to seed itslf into the subarachnoid spaces both in the posterior fossa involving cranial nerves and in the spinal subarachnoid space involving spinal nerves. No evidence of this is noted from the protocol. The duration of symptoms would appear to this examiner to be more in favor of an astrocytoma of the left cerebellar hemisphere, a cystic lesion which many of these are. An ependymoma which originates within the fourth ventricle and possibly in one of the lateral recesses could well explain the patient's symptomtology; however, it is more likely to occlude the lateral recess and fourth ventricle. Hemangioblastoma is very rare in childhood but could produce symtoms in accord with the patient's symptomtology as described. As a general rule polycythemia is an accompanying finding and very frequently there are retinal angiomata which are readily visualized on ophthalmoscopic examination.

My diagnosis will be cystic astrocytoma, left cerebellar hemisphere.

DIFFERENTIAL DIAGNOSIS

Dr. Ralph A. Ross*: In summary, an infant born perfectly normal, without any evidence of abnormal stress first showed signs of torticollis at the age of three months. A diagnosis of local muscle disease—a congenital or traumatic injury to the sternocleidomastoid muscle with shortening—was made and the proper treatment of stretching the muscle and maintaining the head in good position was instituted. At the age of eleven months there had been no improvement in this condition. There was, however, no evidence of other neurologic deformity on admission to the hospital. There was definite increased activity on the affected side and laxness of the muscles in the opposing group that was apparently considered due to the constant stretching. There was free mobility. X-ray films of the spine and the skull was taken at that time. Do you have those films Dr. Wyman?

Dr. Stanley M. Wyman: These are only reasonably good films of the skull, but the skull seems to be normal in contour and without evidence of increased pressure or widening of the sutures. The spine curves toward the left, and I believe there is a suggstion of some widening of the cervical canal both anteroposteriorly and laterally. Unfortunately, the films of the later examinations, the encephalogram and myelogram, are not at hand.

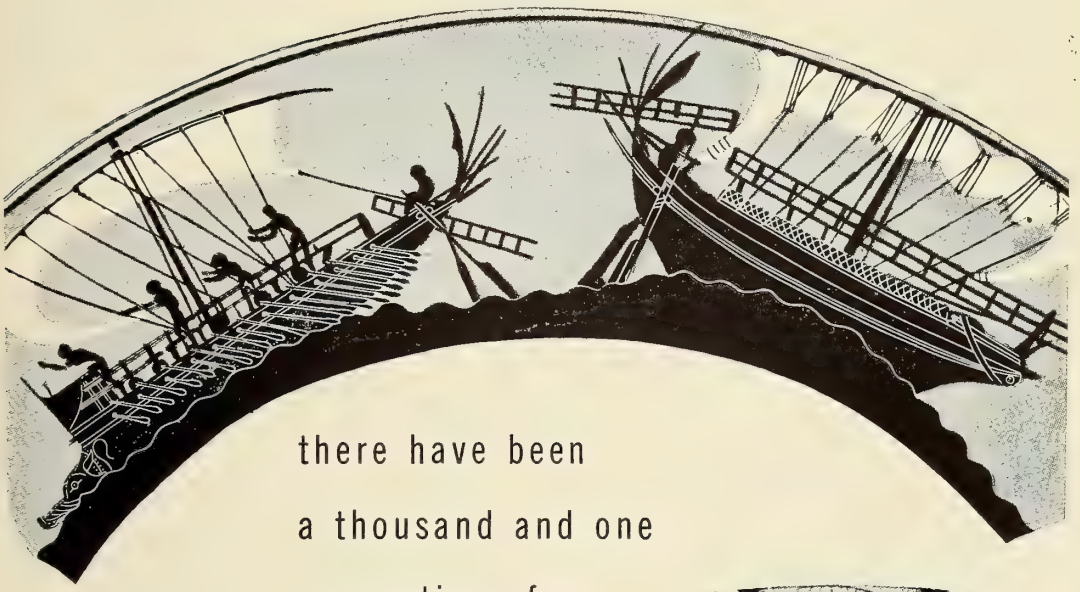
Dr. Ross: I am, therefore, not aided in diagnosis by this x-ray examination except that there is no clearcut evidence of increased intracranial pressure, which should be shown at this age by separation of the sutures. The widening of the vertebral canal is not borne out by the finding of any abnormal structure by the contrast medium as described in the protocol. Were any head measurements taken at the two admissions that might indicate the development of increasing intracranial pressure? One would expect a growth normally of 2 or possibly 3 cm, in three months, but not more.

Dr. Allan M. Butler: No head measurements were taken.

Dr. Ross: At thirteen months of age the child was readmitted with the additional findings of increased irritability and a broad-based gait. I wonder how much significance to attri-

*Physician, Children's Medical Service, Massachusetts General Hospital.

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bute to symptoms of unsteadiness at the age of thirteen months. Inasmuch as this child was just bginning to learn to balance, it would be a little difficult to evaluate his ability to walk. A broad-based gait would be unusual in a child just starting to walk and probably was of significance. The spinal-fluid pressure on the second examination was slightly above the upper limits of normal, but in a child of thirteen months who is struggling, as almost invariably happens, the reading is of no great significance. However, the rise in cerebrospinal-fluid total protein from the original reading of 71 mg. to 160 mg. per 100 cc. some months later suggests the presence of some irritative lesion in the central nervous system. The next information of importance is that no electromyelographic evidence of a lesion in the cervical column was elicited, but there was a displacement forward of the fourth ventricle, with lateral ventricles enlarged,—in other words, evidence of a space-occupying lesion in the posterior fossa,—with some block in the ventricular system.

Could a space-occupying lesion in the posterior fossa explain the whole picture, the broad-based gait being due to some lesion in the cerebellum? Yes. The irritability of a child is a hard thing to define, but certainly increased intracranial pressure with headache may express itself simply as increased irritability in a child of ths age. The torticollis of nine months' duraton is rather hard to accept on the basis of a lesion present in the posterior fossa for this time. It must represent the excitation of the nerve due to infiltration or pressure or possibly a cerebellar ataxia, which in my limited experience does not seem likly. However, we will be instructed, in that, I am sure, by more proficient observers. Therefore, without the benefit of seeing th films, but accepting the statement in the protocol, I believe there was a space-occupying lesion in the posterior fossa.

Could the lesion have been due to infection? There was no evidence that the tuberculin test or blood Hinton test was positive. Either tuberculosis or syphilis might produce a granulomatous lesion. A pyogenic abscess of this duration would be unlikely, and there was no evidence of any infection. I shall therefore dismiss that possibility.

That leaves me with the possibility of a tumor n the cerebellum. A tumor in the cerebellum of an infant progressing for nine months without producing more obvious symptoms than this is probably a slowly growing tumor. If it was a slowly growing tumor, at this age statistically it probably was an astrocytoma. If the symptomatology of the torticollis was not related and there were two separate diseases, this could have been a more malignant type of tumor, such as a medulloblastoma. However, I will leave my diagnosis as cerebellar tumor, probably astrocytoma, producing cerebellar ataxia with torticollis.

A Physician: I wonder if you would add a dermoid cyst

Dr. Ross: It is fair enough to say that one can go through a whole list of possible lesions that might occur. I mentioned these two tumors because of the statistical chances.

Dr. Bertram Selverstone: I believe it would be rather unusual to have a total protein of 160 mg. per 100 cc. with a dermoid cyst. That suggests a more actively meoplastic lesion.

Dr. Tracy B. Mallory: Dr. Selverstone, would you tell us the opinion on the ward?

Dr. Selverstone: We were very puzzled by this whole picture, and the diagnosis was not clear in our minds until we had done the pneumoencephalogram that showed just what was described. Although there was some disagreement among the radiologists, there was generally though to be an anterior displacement of about 1 cm. of the fourth ventricle, whose outline was otherwise fairly normal. We therefore believed that we were dealing with a cerebellar tumor. In view of the long history we thought, as Dr. Ross did, of an astrocytoma or possibly of a dermoid cyst in spite of the unusually high protein. We also considered the possibility of involvement of the accessory nerves as a cause for the torticollis.

Dr. Mallory: Would you like to comment on the clinical features, Dr. Kubik?

Dr. Charles S. Kubik: There were some interesting features about the case that might be mentioned. The head could be straightened out, partly at least, without an anesthetic. It seemed to me that the position of the head was not due to muscle spasm or paralysis. The patient always assumed the same position, lying face down with his rear end up in the air and his head down agaist the pillow and flexed acutely to one side. That, together with the nystagmus and the unsteady gait, suggested a

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lesion in the posterior fossa, possibly causing a disturbance of the postural reflexes. I have never seen another case like this. Tumors of the posterior fossa are not very uncommon, and there is usually a little tilting of the head, but nothing like this.

Dr. Selverstone: Most of us thought there was a reduction in the bulk of the posterior cervical muscles on the right as compared with the left, and we thought that there was some spasm of the left posterior neck muscles as well. As noted in the protocol, we also considered the right sternocleidomastoid muscle to be diminished in bulk as compared with that on the left. I might add that there have been 2 similar cass to my knowledge at the Children's Hospital within the past few years.

CLINICAL DIAGNOSIS

Tumor of posterior fossa.

DR. ROSS'S DIAGNOSIS

Astrocytoma of cerebellum.

ANATOMICAL DIAGNOSIS

*Astrocytoma of cerebellum.*

PATHOLOGICAL DISCUSSION

Dr. Mallory: We might look at the pictures of the operation, Dr. Selverstone.

Dr. Selverstone: On the slide taken at operation before the arachnoid was opened, the medulla is grossly expanded and extends down to the lower border of the lamina of the second cervical vertebra. The medulla was diffusely widened and discolored, slightly more on the left side than on the right. When the arachnoid was opened, lying just beneath was a tumor, which appeared to arise from the closed part of the medulla. It extended into the lower part of the fourth ventricle and formed a collar around the medulla. The tumor could be followed around to the point where it was actually in contact with the accessory nerves of either side as well as with the cervical nerve roots. There was, as is commonly the case, no posterior root of the first cervical nerve, but its anterior root and both the anterior and posterior roots of the second nerve as well were involved. The tumor appeared greasy and was gray. It was impossible to remove the tumor entirely because of its very firm adherence to the closed portion of the medulla and to the floor of the fourth ventricle. Accordingly, I would guess that I was able to remove from 50 to 70 per cent of the lesion. I left an extensive decompression.

Dr. Kubik: The tumor was an astrocytoma. Was it cystic?

Dr. Selverstone: It was entirely solid.

Dr. Ross: Was the torticollis due to irritation of the nerve or to paralysis?

Dr. Selverstone: It is hard to say. One might speculate that there might have been irritation of the left nerves and paralysis of those on the right.

Dr. Kubik: How is the patient now?

Dr. Selverstone: Postoperatively he was much less irritable than before, and he seemed much happier. He was given x-ray therapy and a month after operation was dicharged. I do not think that any apparatus should be used in an attempt to correct the torticollis. It was not improved since operation.

## PERSONAL NOTES

*Doctor Kenneth C. Baker* of Tucson attended the Tenth International Congress of Dermatology in London, England, July 21 to 26. Doctor Cleveland J. White with whom he was formerly associated in Chicago, and Doctor Baker had a scientific exhibit at the Congress on Diseases of the Nails. Following the meeting Doctor and Mrs. Baker toured England and Scotland.

## NOTICE TO MEDICAL AUTHORS — 1953

The Scientific Program Committee for the 1953 Tucson meeting feels it is necessary to limit the number of papers given by Arizona speakers so as to permit more time for guest orators and for discussion. In order that the Committee may select those most worthy of presentation you are urged to start working on your paper now, and to send five copies of an abstract of it to the Committee chairman before December 1, 1952. When approved by the Committee, you will be notified in sufficient time to complete the final draft.

**SCIENTIFIC PROGRAM COMMITTEE**

By Edward M. Hayden, M. D., Chairman
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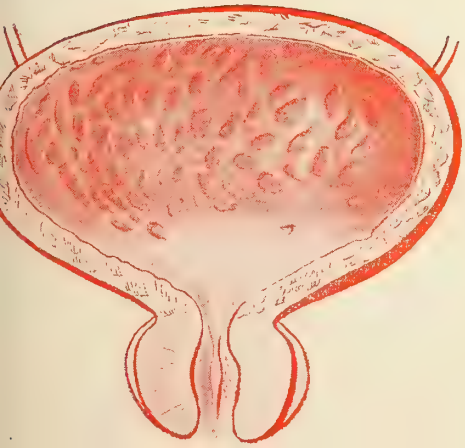
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# THE *Secretary's* MESSAGE

## IT'S ALL OVER BUT THE VOTING!

The Democratic convention closed in Chicago on a note of confusion and turbulence, and the nominees of both parties now can settle back to do some serious thinking before oiling up their machines for the big vote-gathering campaign in November.

In glancing over the two party platform, the things that have to be done or undone will not be easy. The problems are plain, but there is a wide gap between statements of principle and execution.

Physicians everywhere are vitally interested in the health planks of both the Republican and Democratic platforms.

The Republicans at their convention came out unalterably opposed to socialized medicine. "We are opposed," the G.O.P. plank said, "to federal compulsory health insurance with its crushing cost, wasteful inefficiency, bureaucratic dead weight and debased standards of medical care."

But the health plank of the Democratic party dodged the issue of compulsory health insurance. It was so carefully worded in many respects that there could be a wide divergence of opinion when it comes to actual interpretation. But as Dr. R. B. Robins, a delegate from Arkansas, said after the platform was adopted: "It might have been worse."

Those sections dealing with health generally, research and hospitals and health centers, were practically non-controversial, but the proponents of socialized medicine succeeded in nailing the word "federal" into the medical education plank. "We advocate federal aid for medical education" leaves nothing to guesswork. It is a clear-cut principle of where the Democratic party stands.

The section dealing with the cost of medical care hedges considerably, leaving a great deal to interpretation. The section begins: "We also advocate a resolute attack on the heavy financial hazard of serious illness." That could mean a lot of things, depending on the way you look at it after the November election. Further along, the section commends President Truman for establishing his Commission for the Health Needs of the Nation. In that portion of the section, the Democratic platform writers shifted the problem of compulsory health insurance to the shoulders of the commission. This action confirms the opinion of the American Medical Association that the commission is a politically inspired one, which both the President and the Democratic party are using as a means to remove the issue of socialized medicine from the fall campaign.

The fact remains that the Truman administration has strongly promoted legislation for years to socialize the medical profession. The health plank of the Democratic platform is an obvious attempt to get out from under this unpopular issue.

Here is the full Democratic health platform:

We will continue to work for better health for every American, especially our children. We pledge continued and wholehearted support for the campaign that modern medicine is waging against mental illness, cancer, heart disease and other diseases.

Research: We favor continued and vigorous support, from private and public sources, of research into the causes, prevention and cure of disease.

Medical Education: We advocate federal aid for medical education to help overcome the growing shortages of doctors, nurses, and other trained health personnel.

Hospitals and Health Centers: We pledge continued support for federal aid to hospital construction. We pledge increased federal aid to promote public health thru preventive programs and health services, especially in rural areas.

Cost of Medical Care: We also advocate a resolute attack on the heavy financial hazard of serious illness. We recognize that the costs of modern medical care have grown to be prohibitive for many millions of people. We commend President Truman for establishing the non-partisan commission on the health needs of the nation to seek an acceptable solution of this urgent problem.

# Editorial

ARIZONA MEDICINE

*Journal of*

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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.
2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. (See MEDICAL WRITING by Morris Fishbein.)
3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.
4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.
5. Submit manuscript typewritten and double-spaced.
6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.

The Editor is always ready, willing, and happy to help in any way possible.

## ARE YOU FOR COMPULSORY HEALTH INSURANCE

*Statement of General Dwight D. Eisenhower*:

"I am not going to answer too specifically, because what could be in a bill labeled compulsory health insurance? I am not so certain. But I can tell you this: I am quite certain over the years that I was at Columbia, no one spoke out more than I did against the centralization of power in Washington, against bureaucratic government and submitting our lives toward a control that would lead inevitably to socialism. . . . I do believe that every American has a right to decent medical care."

In discussing Federal aid to medical education, General Eisenhower said that in private universities we must "support medical education by private means, because if we didn't it would be the first step toward the socialization of medicine, and I am against socialization."

*Statement of Governor Adlai Stevenson of Illinois*:

"I am against the socialization of the practice of medicine as much as I would be against the socialization of my own profession, the law. . . . If the insurance principle could be brought to bear on these catastrophic illnesses, it would largely eliminate the specter of terror from the average home. . . . I am sure that . . . the common objective can be largely realized without the destruction of professional independence.

"Basically, the problem is how to lift people over the costs of major illness. I don't know whether voluntary plans can do the job. I think the new commission on medical needs may well add some light and remove some heat, enabling us to find a satisfactory solution to this perplexing problem."

*Statement of Senator Richard M. Nixon*:

". . . There is no chance whatever at this time for any type of compulsory health insurance program to be enacted. . . . On the other hand, I think you must recognize, *and that all of us who are interested in this fight must recognize*, that those who favor such legislation will continue to work fanatically for their cause, in the hope that somehow, sometime in the future, they will be able to accomplish their purpose.

"I think . . . that a great number of people, probably a majority of the people in the country, are convinced that the compulsory health insurance programs which sound so good in theory have not worked out in action in those nations which have tried them.

"I am convinced that the medical profession has taken a very long step in the right direction with its recently announced program of subsidizing medical schools on a voluntary

rather than on a governmental basis. I would suggest also that additional voluntary action is needed (in dealing with) the problem of encouraging wherever possible voluntary health insurance programs. It seems to me that the objective toward which we should work in the United States is a system where eventually anybody who wants health insurance can get it—where those who should have health insurance are encouraged to get it—but where no one in the United States is compelled to take out such insurance against his will. If the profession adopts that objective we will remove by voluntary action the strongest arguments that the proponents of government control of the medical profession have at the present time.

"I believe it is essential that all members of the medical profession recognize that an attempt to socialize any American profession—any American institution—constitutes a threat to all.

"Traditionally, the great accomplishments in this country have not been through government action, but through individual and cooperative action. . . . (Our task) is by precept and by example, to prove to the people of the world that a free people, working as individuals, working cooperatively, can solve the problems of our society and can solve them more effectively than can a government."

*Statement of Senator John J. Sparkman*:

"I am in favor of adequate medical attention for the people of this country. However, I have not favored what is generally known as Socialized Medicine.

"I would be opposed to any plan which I thought would, in effect, socialize medicine, and to any medical program which would destroy the relationship of doctor and patient."

## AMERICAN COLLEGE OF ALLERGISTS

PITTSBURG, PA., — Patients who might otherwise die from a severe, continous attack of bronchial asthma can now be saved by a form of intravenous ACTH treatment, according to Dr. Stephen D. Lockey, of Lancaster, Pa., who spoke before the Eighth Annual Congress of the American College of Allergists here today. Dr. Lockey reported on work he and his associates (Drs. John D. Paul, John L. Grosh, Arthur S. Griswald and Donald S. Stubbs) had done at Lancaster General Hospital. Using the slow intravenous administration of ACTH dissolved in a solution of distilled water containing amounts of glucose and potassium chloride, the doctors found that desperately ill patients could be markedly improved — often within 24 hours — so that they survived life-threatening episodes of status asthmaticus.

In his report, Dr. Lockey emphasized that this treatment must be carefully supervised by a well-trained, cooperative medical team who constantly adjust the treatment to meet the patient's changing needs. Such treatment, Dr. Lockey said, "gives excellent results, and usually produces complete relaxation within twenty-four hours."

———o———

PITTSBURG, PA. — In certain cases of skin trouble, the human skin itself might well be the cause of its own disorder.

This theory of the self-punishing skin was discussed by Dr. Frank A. Simon, Assistant Clinical Professor of Medicine, University of Louisville, at the Eighth Annual Congress of the American College of Allergists which began its three-day session here today.

According to Dr. Simon's hypothesis, dander is the villain in the piece — that is, if the patient is suffering from certain atopic, or allergic, skin eruptions. Theoretically, this is what happens: dander, developing from the epidermis, returns to plague the inventor by becoming the very stuff to which that same epidermis is allergic. In the professional language of Dr. Simon. "We have, therefore, in atopic dermatitis, a condition which is thus far unique in that almost all cases are caused by an allergen (dander, n this case) from the same source — the skin."

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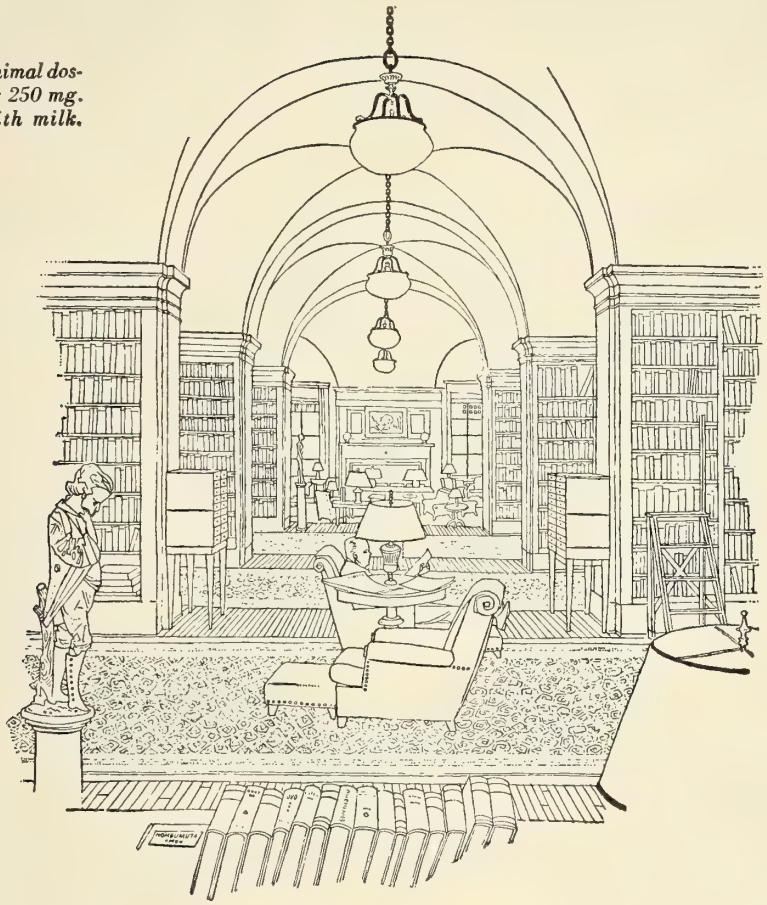
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# TOPICS OF *Current Medical* INTEREST

## RX, DX, AND DRS.

By GUILLERMO OSLER, M. D.

This column has contained comments on the fabulous DR. CLARENCE SALSBURY during the several years of its existence. Salsbury, the Dr. Big of the Navajos; Salsbury, chairman of the yearly Clinical Congress; Salsbury, retired from Ganado; Salsbury, Chief of the Arizona Bureau of Preventive Medical Services. . . . Now we can join the general murmur of approval as he succeeds Dr. James Ward as head of the State Health Department. Congratulations all around!

---

**PRICE CUTS.—Congratulations are also due Merck & Co. for the ninth reduction in the price of Cortone (cortisone). This time it dropped 40 per cent.**

**Isoniazid costs are still being lowered by the drug companies, but it must be reported that the news hasn't reached some druggists. (That COULD be an explanation of their often disproportionate charges).**

---

The American Hospital Supply Corporation bulletin tells of an Ohio hospital which has taken the lead in setting up A NEW FEE SYSTEM. . . . Patients are charged for services, medications and accommodations on a cost basis, plus 10 per cent. . . . This is easily explained and understood. It is good business. It allows for a monthly review of costs and rates. Charity work can be charged against endowment or special funds.

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**A national press service tells of the caution expressed by a medical journal over MISUSE OF VITAMINS. "Go Easy on Vitamins!" it says. . . . This is a rare warning, and probably only healthy people will read it. The origin was an editorial by Dr. John Caffey in The American Journal of Roentgenology and Radium Therapy. Useless use of Vitamin A was the particular angle of the article, and concentrates were called 'probably superfluous, certainly expensive, and possibly hazardous.'**

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Some of the recent FIGURES ON HOSPITALIZATION in the United States are worth chewing over. . . . It was possible to say, ten years ago, that the hospitals admitted 15 million patients; now the total is 18.2 millions. The 6,637 registered hospitals have about 1,530,000 beds. Three million babies were born in hospitals last year. . . . General hospitals care for 42%; mental hospitals 48%; TB hospitals 6%; and other hospitals 5%. . . . Government groups control 3 out of 10 hospitals and provide 7 out of 10 beds. . . . Admissions to TB hospitals dropped from 113,000 to 107,000 in 1951, but the average daily census of 73,588 was 1,200 higher than ever.

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**The California attorney general opines that CLINICAL LABORATORIES may perform VENIPUNCTURES, etc., for persons whose licenses do not allow them such a privilege. . . . That is a boon to chiropractors and their ilk.**

---

Here is a possible TELEPHONE CONVERSATION OF THE FUTURE,—"Operator, please try and get me a better connection; the QRS complex is not coming thru clearly. That's better, thank you. Oh yes, Dr. Jones! It looks like a coronary to me, but let's try Lead I again". . . . Three medical inventors in Omaha have devised a preamplifier which strengthens the impulses from an ECG into FM signals which can be sent over a telephone wire and charted by the specialist. The GP can discuss the graph with the cardiologist over the same wire.

---

**Two 'American Colleges' (Radiology and Chest Physicians) are lending support to the plan to make the use of chest x-rays more widespread. . . . The American Hospital Association and the National TB Ass'n. have urged hospitals to adopt the method as a routine. The two Colleges also urge physicians to x-ray all patients, and advise that patients from surveys be subject to medical supervision.**

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The CIBA Clinical Symposia has presented a few dozen beautifully colored photographs of NORMAL AND PATHOLOGIC FUNDI. The photographs, plus a descriptive lecture, is from the collection of Dr. Arthur Bedell of Albany, N. Y. . . . It is a sad admission for an internist to make, but the marked variations in different types of normal and abnormal fundi, as well as the similarity between some normals and abnormals, forces us to lean on the opthalmologist—and hope that HE can be fairly sure.

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**An original paper, "The Incautious Use of Antibiotics,—" published in ARIZONA MEDICINE in July 1951, has been put out in abstract form by the National TB Ass'n. and reprinted in the August 1952 Ohio State Medical Journal. . . . It exposed the way in which tuberculosis can be missed by treating respiratory symptoms without a definite diagnosis, and it stressed the value of routine x-rays and fluoroscopy.**

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Note the huge recent advertising campaign for an ANTI-BED-WETTING METHOD. The device is a radio-like cabinet, rented but not sold, said

to be invented by a doctor. A list of publications by other M.D.'s is usually given. It promises a probable correction of enuresis in 2 to 4 weeks. . . . From the advertising you would hardly guess that it works.

---

**The exact extent or limits of the WORLD HEALTH ORGANZATION (WHO) are fairly obscure to the average physician—or at least to this one. . . . They seem even more distant, after one reads of the trip planned by Dr. Edwin Lennette of Sacramento, an authority on Q fever. He is a member of the WHO Expert Committee, on Zoonoses. . . . One shouldn't say WHO? to this, but WHAT?**

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TIME Magazine takes the conservative role in a discussion of HEXAMETHONIUM, the most recent nerve-blocker in the treatment of high blood pressure. . . . TIME stresses the need for care and control in its use, and decried the demand by patients on physicians for specific new drugs when they may not be indicated.

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**A paragraph in this column several months ago gently ribbed the journal 'NURSING HOME ADMINISTRATOR'. . . . Its publisher read it, replied at once, and thus it gets another paragraph. . . . The cover of the current number is more pleasant than that of the previous one. The brief notices, illustrating equipment of possible use to nursing homes, are attractive. Articles about care of chronic and aged ill persons could be valuable. . . . (You're welcome, Mr. Chary).**

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Dr. Walter Alvarez now writes popular medical articles for The Register and Tribune Syndicate, Inc. . . . He suggests that every M.D. who has to care for a patient with severe arthritis obtain a copy of the HANDBOOK ON RHEUMATIC DISEASES by the Arizonans Holbrook & Hill. He might have said 'purchase' instead of 'obtain'. . . . It helps people who write or publish books.

## MEDICAL ASPECTS OF CIVIL DEFENSE

The Council on National Emergency Medical Service of the American Medical Association has, during the past several months, sponsored a series of articles on the medical aspects of civil defense which has appeared in the Journal of the American Medical Association.

These articles have now been reproduced in booklet form. It appears that the articles are of genuine interest to the medical profession and the general public. The booklet sells for 25c a single copy, and 20c per copy for orders of 100 or more which may be placed direct with the Council on National Emergency Medical Service of the American Medical Association, 535 N. Dearborn Street, Chicago 10, Illinois.

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## NATIONAL EDUCATION CAMPAIGN

A copy of the Health Plank in the *Democraic* Party Platform for 1952, adopted in Chicago, July 23, is enclosed herewith for your information, and for comparative study with the Health Plank in the *Republican* Party Platform, sent you earlier.

It is interesting to note that this year's statement of policy on the health issue by the Democratic National Convention is considerably more moderate than the position taken by President Truman, and is also more moderate than the Party's previous position.

The Democratic Health Plank, while it advocates Federal aid to medical education, does not contain specific endorsement of National Compulsory Health Insurance.

As anticipated by medical leaders, when the President's Commission on the Health Needs of the Nation was created some six months ago, the Democratic statement of policy seeks to avert a showdown before the voters on the health issue by commending President Truman for the creation of a "non-partisan Commission to seek an acceptable solution of this urgent problem."

The Republican statement of policy on the health issue this year, as you will recall, was an unqualified declaration that "We are opposed to Federal Compulsory Health Insurance with its crushing cost, wasteful inefficiency, bureaucratic dead weight and debased standards of medical care." The Democratic plank is anemic by comparison, but it does pay indirect tribute to the effectiveness of the doctors' crusade against Socialized Medicine, in that it seeks to remove the issue from consideration during the forthcoming Presidential and Congressional election campaigns.

Elmer L. Henderson, M.D.
Chairman, Coordinating Committee

## HEALTH INSURANCE PLANK
### 1952 *Democratic* Party Platform

We will continue to work for better health for every American, especially our children. We pledge continued and wholehearted support for the campaign that modern medicine is waging against mental illness, cancer, heart disease and other diseases.

*Research*: We favor continued and vigorous support, from private and public sources, of research into the causes, prevention and cure of disease.

*Medical Education*: We advocate federal aid for medical education to help overcome the growing shortages of doctors, nurses, and other trained health personnel.

*Hospitals and Health Centers*: We pledge continued support for federal aid to hospital construction. We pledge increased federal aid to promote public health thru preventive programs and health services, especially in rural areas.

*Cost of Medical Care*: We also advocate a resolute attack on the heavy financial hazard of serious illness. We recognize that the costs of modern medical care have grown to be prohibitive for many millions of people We commend President Truman for establishing the non-partisan commission on "the health needs of the nation to seek an acceptable solution of this urgent problem.

## HEALTH INSURANCE PLANK
### 1952 *Republican* Party Platform

We recognize that the health of our people as well as their proper medical care cannot be maintained if subject to federal bureaucratic dictation. There should be a just division of responsibility between government, the physician, the voluntary hospital, and voluntary health insurance. *We are opposed to federal compulsory health insurance with its crushing cost, wasteful inefficiency, bureaucratic dead weight, and debased standards of medical care.* We shall support those health activities by government which stimulate the development of adequate hospital services without federal interference in local administration. We favor support of scientific research. We pledge our continuous encouragement of improved methods of assuring health protection."

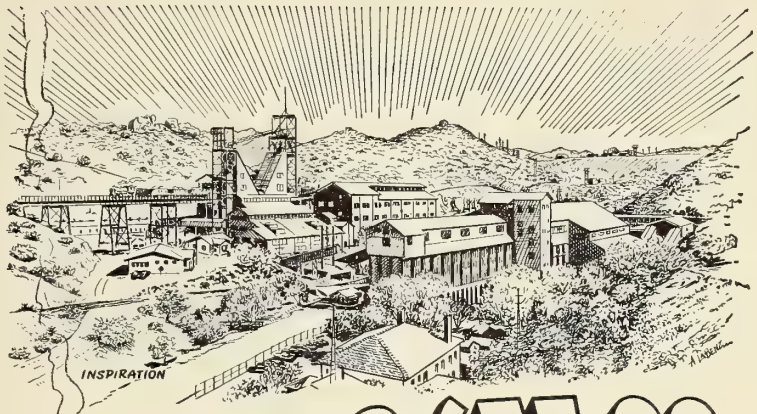
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Arizona's mining industry is vitally important to the thousands of suppliers and merchants living throughout Arizona, who furnish material and supplies, machinery and parts, services and the many other necessary elements that insure the flow of Copper, Lead and Zinc to the nation and the world.

For the past forty years, Arizona's mining industry has been urging the purchase of Arizona products, trading with home merchants, the "Buy in Arizona" movement. During the past five years Arizona mines bought **$81,652,677.00** from Arizona merchants, wholesalers, manufacturers, railroads, power producers and other Arizona firms. In **1951**, Arizona mines purchased **$19,345,478.00** from Arizona suppliers. Great as these expenditures are, large scale developments now in progress, such as San Manuel, Silverbell, Copper Cities and Bisbee will further increase such expenditures in future years.

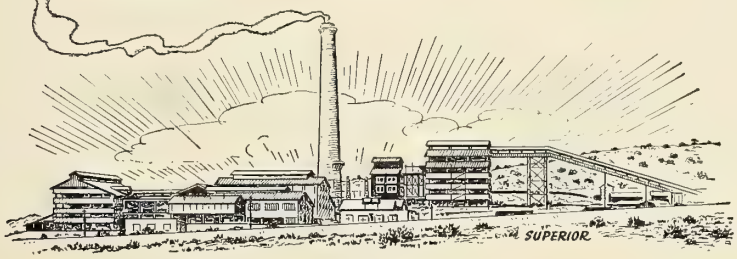
The development and operation of Arizona's low-grade copper orebodies, both Open Pit and underground, calls for ever increasing purchases of supplies and services from Arizona firms.

In Open Pit operations huge tonnages of waste rock must be stripped away before any copper-bearing ore can be recovered. In Underground Mines miles of tunnels must be driven before mining of the ore can be started. The ore itself contains less than 20 lbs. of copper to the ton, but before this copper can be recovered the ore must be mined and processed. Processing consists of crushing, concentrating, smelting and refining. Following all this the copper must be sold in competition with copper produced in other states of the Union and in foreign countries, as well, before there can be any return on the money that has been spent on the property.

Huge sums of money, beyond the conception of the average person, must be invested to equip, develop and operate a mining property. Without these expenditures for mining machinery, railroads, concentrating plants, smelters and refineries, Arizona's ore deposits would be worthless, as they could never be worked on a small scale. These expenditures total thousands of dollars for every worker employed by the mining companies. They also bring real business to Arizona suppliers. In addition to the large Copper mines, Arizona has many small mines and mining prospects, lead, zinc and non-metallic mines, all of which play their part in building up business for Arizona.

Then too, throughout the State, there are all the thriving communities dependent on the mining industry. Here Arizonans live and work to produce the copper, lead, zinc, gold and silver which makes Arizona the leader in America's metal production. These communities depend on the farmers and ranchers of the state for food supplies, and they are among the best customers of Arizona's merchants.

The importance of the mining industry to the welfare of the whole State of Arizona is tremendous. It supports a huge payroll; it pays the largest share of Arizona's taxes; and it provides a continuing market for Arizona products and supplies.




# ARIZONA MINING INDUSTRY

**Arizona Small Mine Operators Association,** 60 Councils in 11 Arizona counties, 3800 members; **American Smelting & Refining Company,** Hayden, Patagonia and Silverbell; **Bagdad Copper Corporation,** Hillside; **Castle Dome Copper Company,** Miami; **Copper Cities Mining Company,** Miami; **Eagle Picher Mining & Smelting Company,** Sahuarita; **Inspiration Consolidated Copper Company,** Inspiration; **Kennecott Copper Corporation. Ray Mine,** Ray; **Magma Copper Company,** Superior; **Miami Copper Company,** Miami; **Phelps Dodge Corporation,** Bisbee, Douglas, Ajo, Morenci, Jerome; **Sam Knight Mining Lease,** Christmas; **Shattuck Denn Mining Corporation, Iron King Mine,** Humboldt; **St. Anthony Mining & Development Company,** Tiger; **Arizona Asbestos Producers Association,** Globe; **Wenden Manganese Producers Association,** Wenden.

## AMEF CAMPAIGN

Dr. Elmer L. Henderson reports that as of May 23, contributions to the American Medical Education Foundation's 1952 campaign totaled more than $600,000 (incl. AMA grant). In four months, the Foundation received 2,500 contributions—more than the total number received during all of 1951.

This is a great start and most certainly represents both rapid and steady progress. However, we must make every effort to maintain the pace, and increase it if possible, if the Foundation is to reach its 1952 national goal of $2,000,000. Gifts received from individual physicians so far this year have averaged $41.00. Although this is a high per-gift average, many checks have been for amounts ranging from ten to fifty dollars.

Activity at the state committee level can be seen in almost every state. This is a healthy sign and one which will insure success.

Are you one of the group of Arizona physicians that have forwarded your pledge in this campaign? Or do you belong to the group of members that have made no gift? Think it over and decide to which of the above group you want to belong. Our medical schools need your financial help—NOW—Donations are tax exempt and you are free to choose the school you wish to aid. If you have contributed in 1951, we ask why not repeat in '52 — or increase your pledge for this year.

## BOOK REVIEW

"*The Serpent-Wreathed Staff*"—a novel by Alice Tisdale Hobart.

If Mrs. Alice Tisdale Hobart had managed to devise a suitable ending for her 402-page novel, "The Serpent-Wreathed Staff," about sixty pages sooner than she did, a tolerant critic would be able to say that she had written a faulty but highly interesting story of human conflicts and loyalties.

Unfortunately, however, the latter part of the book degenerates swiftly and recklessly into an amazing propaganda piece for National Compulsory Health Insurance. The last forty or fifty pages sound as if Mrs. Hobart knocked them out hastily at a desk piled high with pamphlets, speeches and news releases handed out by Federal Security Administrator Oscar Ewing and the Committee for the Nation's Health.

This uncraftsmanlike abuse of artistic license, added to some of the implications built up in earlier pages, creates the impression that the entire novel was designed as a subtle presentation of the case for Socialized Medicine. As a result, Mrs. Hobart undermines much of the validity that does exist in some of the earlier parts of this book about doctors, modern medicine and a changing world.

Despite her failure to give a true interpretation of the social and economic developments in medicine today, the author shows her usual skill in weaving a plot and telling a story. She is at her best when describing the personal problems and struggles, the emotional triumphs and defeats, of her principal characters. On this fictional level the book has undeniable merit and strength, for the reader finds himself sharing the fears, anxieties and grief of the people in the novel.

Central figures in the story are two brothers, Dr. Alan Towne and Dr. Sam Towne, grandsons of old Dr. Samuel Towne, who had achieved medical eminence only after many years of struggle and criticism because of his unorthodox ideas. Sam, the older of the two brothers, is portrayed as successful, wealthy, conservative. Alan is drawn as the idealistic, progressive pioneer, striking out in new and dangerous directions and carrying on in the tradition of his grandfather.

Main action of the novel begins shortly after the end of World War II when Alan leaves a comfortable, assured partnership with Sam to start a group practice. From then on the troubles and tragedies mount in rapid sequence and growing complexity. In the short space of three or four years Alan becomes an "Anthony Adverse" in modern American medicine.

When the facile, all-inclusive plot is used as a mechanism for discussion of the social, economic and political aspects of modern medicine, the book suffers not only from the standpoint of literary merit but also from the standpoint of accurate reporting. On this level the book is dangerously superficial. Complex problems and issues affecting the practice of medicine are introduced in rapid-fire, hop-skip-and-jump fashion—over-simplified and over-dramatized, but mixed with just enough truth and half-truth to give credence to a distorted picture.

As all of these elements are woven deftly into the novel, their manner of presentation builds




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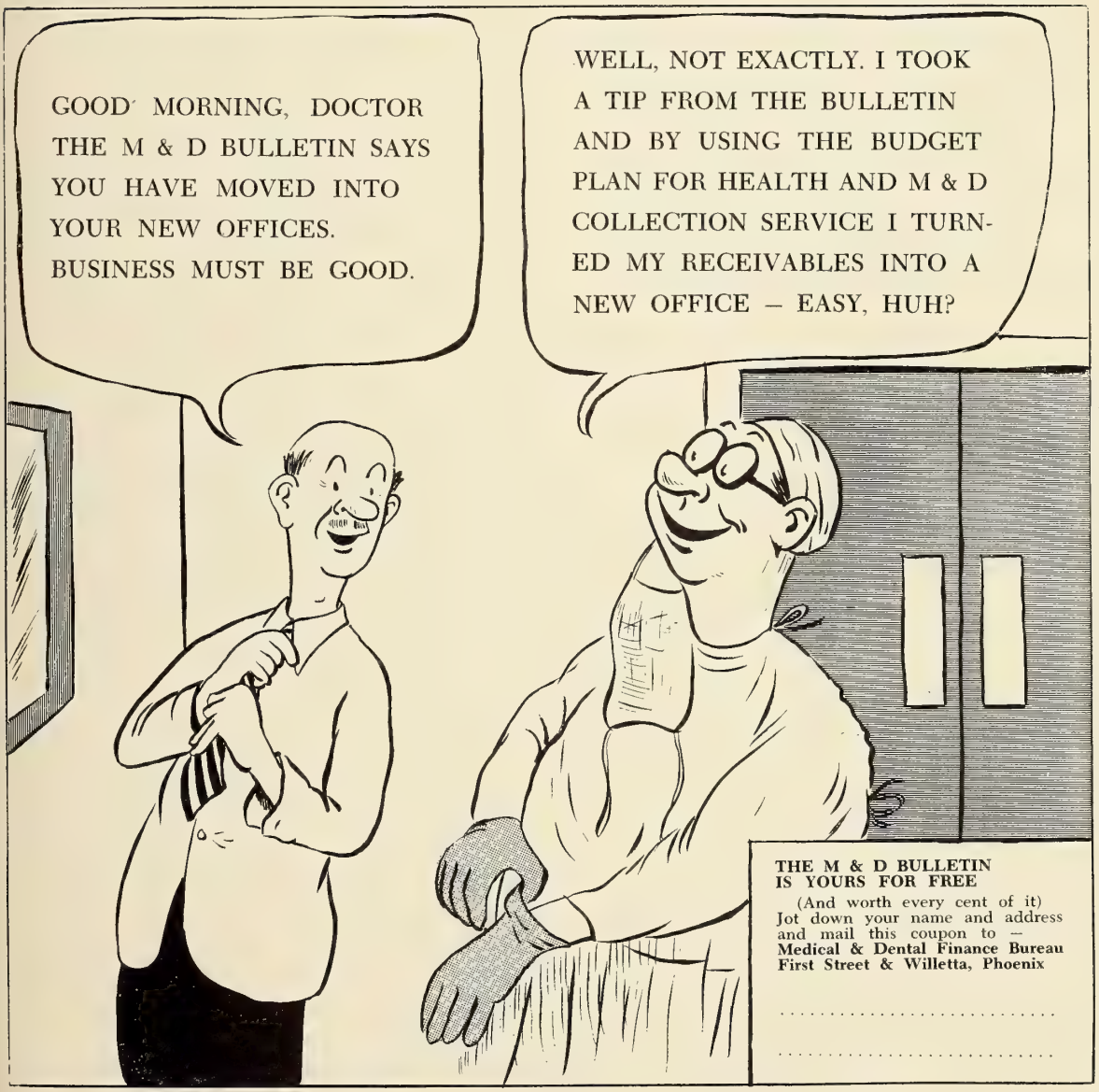
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the subtle implication—even in the earlier parts of the book—that most doctors are primarily and selfishly interested in making money, bolstering their own reputations and preserving the status quo in medicine.

Mrs. Hobart also gives the impression that group practice, health insurance plans, preventive medicine and similar ideas are brand new developments—practically untried and unheard of in a present-day American city. Actually, most of the concepts and projects which occur to Alan Towne, in sudden flashes of inspiration, are part of the knowledge of any alert medical student. Actually, the industrialists and businessmen on Alan's hospital board are utterly untypical when they talk and act as if they had never heard of such a thing as group health insurance for their employes.

Before Mrs. Hobart writes another novel on this subject, someone should familiarize her with the major facts and realities in the field of modern medical economics.

Someone, for example, should tell her about the many famous clinics and countless other forms of group practice which are in successful operation throughout the country, some of them since around the turn of the century.

Someone should tell her about the hundreds of fast-growing, constantly-improving Voluntary Health Insurance plans, which by the end of this year will be protecting an estimated 90 million Americans against the major costs of illness and accidents.

Someone should tell her about the Nationwide progress of State and County Medical Societies in setting up doctor placement programs, grievance committees, emergency call systems, cost adjustment committees, local health units and a variety of other activities designed to make good medical care available to all the people.

Incidentally, someone also should inform Mrs. Hobart that the "National Medical Association", a name which she uses as a pseudonym for the American Medical Association, is the actual and proper name of the National organization of Negro physicians.

But Mrs. Hobart, unmindful of such trivia as facts and accuracy, writes furiously on, and after only two or three years of struggle in group practice and as head of a group hospital, Dr. Alan Towne is an advocate of Government Health Insurance. Apparently neither the author nor the good young doctor sees the glaring contradiction between Government medicine and Alan's own philosophy of careful, personalized treatment of the whole patient, in mind and spirit as well as in body.

Everyone interested in American medicine, and in the effort to find intelligent solutions to our medical care problems, should read "The Serpent-Wreathed Staff"—if for no other reason than to help repair the damage which the book does.

Read simply as a novel, it is a moving, absorbing story.

Read as a source of information affecting public opinion on medical-economic issues, it unfortunately is an example of careless, superficial writing, with a built-in conclusion contrary to the convictions of the great majority of Americans today.



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# Woman's AUXILIARY

## HIGHLIGHTS FROM CONVENTION

From the President's Message to the Chicago Convention comes this sentence, "The work of our predecessors sets a high standard which we shall strive to maintain."

"WE" at one time carried little weight but currently we represent sixty thousand (60,000) women for whom Mrs. Ralph Eusden is National spokesman. We have grown steadily and with increasing purpose over a period of thirty (30) years. Our worth is measured in the willing service we have rendered to our local communities and to our Nation under the guidance of the American Medical Association.

Through Organization very tangible aid has been given as witnessed in two (2) large contributions made this year. For the second time a check for $10,000.00 was given to the American Medical Education Foundation and $500.00 was given to the World Medical Association. Last year $500.00 was given to the Committee on Careers in Nursing and $100.00 to the World Medical Association.

With such evidence of our power for good, with service to others so apparent the expansion of our Program through more and more women is made easy. To those who are eligible do accept the invitation extended by the present Auxiliary membership to join us in a sincere effort to build a better tomorrow.

Give the October meeting to the Legislative Chairman who knows what goes on in Washington, also the reaction of the Medical Group whether for good or bad.

We are going to vote certainly, but let that vote be justified and made with intelligent reasoning based on factual knowledge.

One of our greatest opportunities for service to lay groups is by the promotion of Today's Health, the official publication of the American Medical Association. This magazine is not available on the news stands but by subscription only, so without apology let us push this material to a public who receives it gratefully.

And speaking of education give yourself over to reading the new and attractive Bulletin, it will make you proud that you are a woman especially a physician's wife.

Within our State everyone knows that Mrs. Jesse D. Hamer is a past National President and remains on the National Board as Historian, most of us know that Mrs. Thomas Bate was Western Regional Organization Chairman but, did you know that Mrs. Carlos C. Craig is Western Regional Chairman of the newly developed Nurse Recruitment Committee?

It is pleasing to note that the American Medical Auxiliary is receiving recognition with the leading women's groups in the country and more pleasing to Arizonan's to realize they have contributed substantially to the National picture through individual effort.

Ruth E. Schoffman
Phoenix, Arizona

## TAKEN FROM "THE COURIER"
### Woman's Auxiliary to the California Medical Association

HEAR THIS!!! . . . One American in six is a potential beneficiary of Federal medical or hospital care . . . 19 million veterans, more than 3.5 million military personnel and dependents, more than 2 million Federal employees, 400,000 Indians and 100,000 merchant seamen . . . Federal agencies are currently hiring new employees at the rate of 2,500 people per day . . . VA's monthly report shows that as of Nov. 30, 1951, hospital patients totaled 104,863 . . . 68,177 of them were under treatment for non-service connected disabilities . . .

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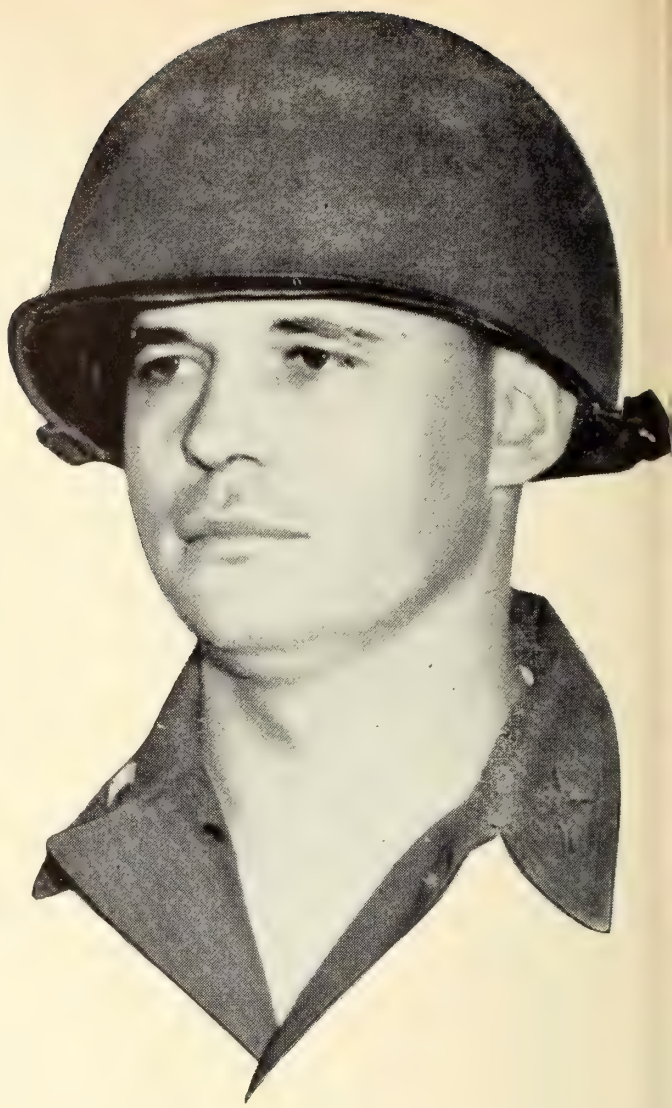


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1. Michael, N.: Ohio State M. J. *48*:42, 1952.
2. Carter, S., in Conn, H. F.: Current Therapy 1952, Philadelphia, W. B. Saunders Company, p. 610.
3. Lennox, W. G., in Cecil, R. L., and Loeb, R. F.: A Textbook of Medicine, ed. 8, Philadelphia, W. B. Saunders Company, 1951, p. 1379.
4. Lennox, W. G., in Piersol, G. M., and Bortz, E. L.: The Cyclopedia of Medicine, Philadelphia, F. A. Davis Company, 1951, Vol. V, p. 215.
5. Christian, H. A.. The Principles and Practice of Medicine, ed. 16, New York, D. Appleton-Century Company, 1947, p. 1370.



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# ARIZONA MEDICINE

*Journal of* ARIZONA MEDICAL ASSOCIATION

VOL. 9, NO. 10 OCTOBER, 1952


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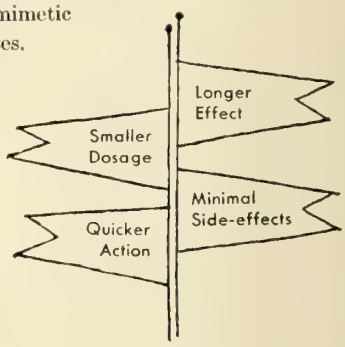
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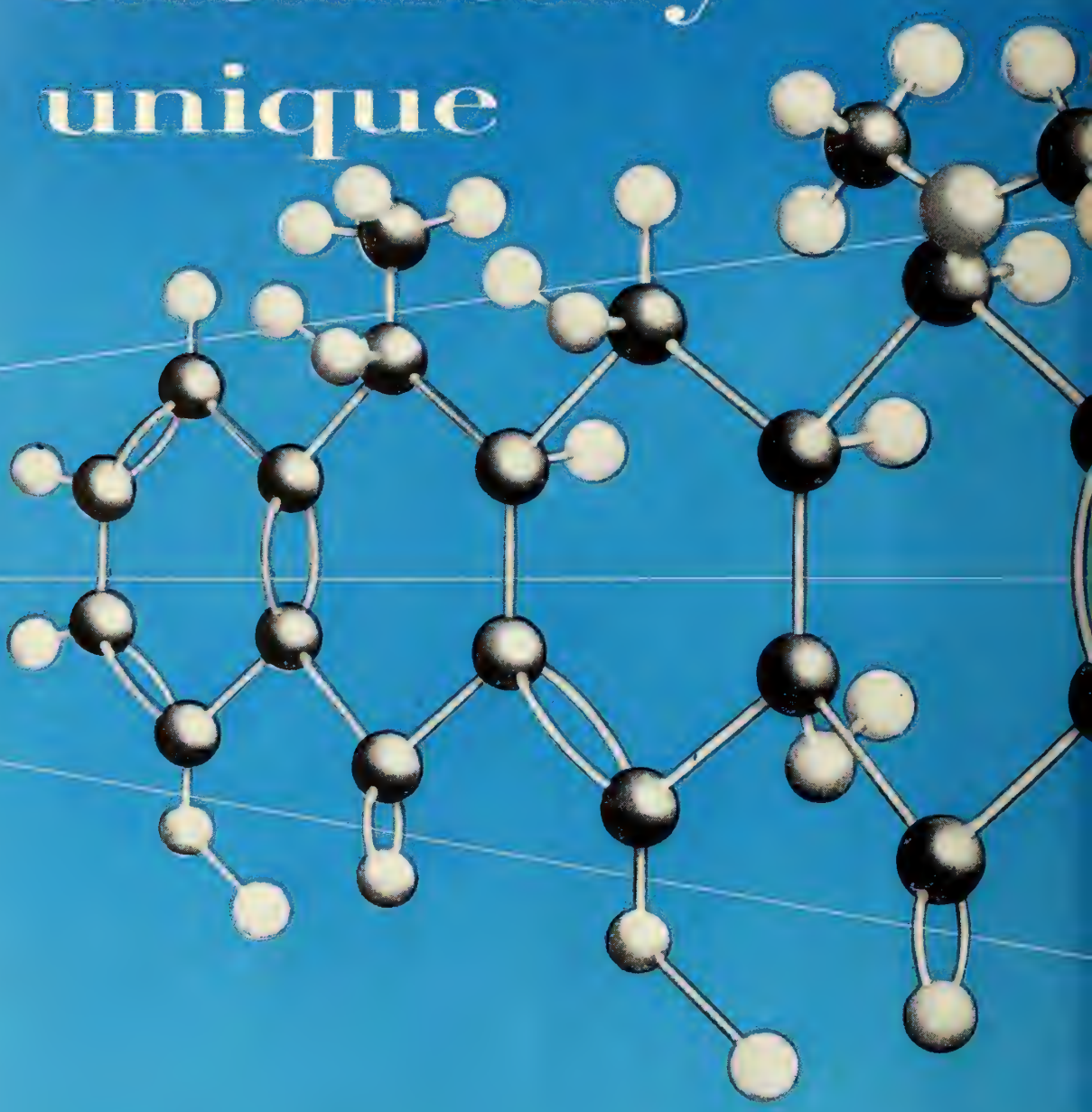



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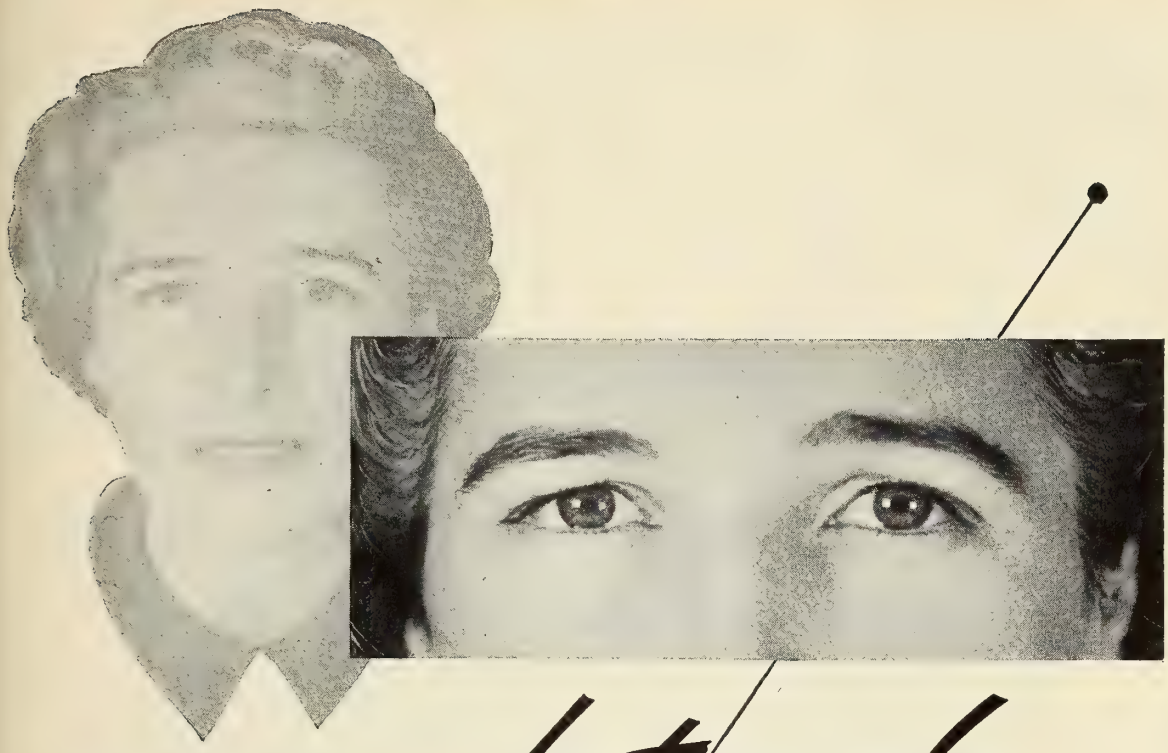
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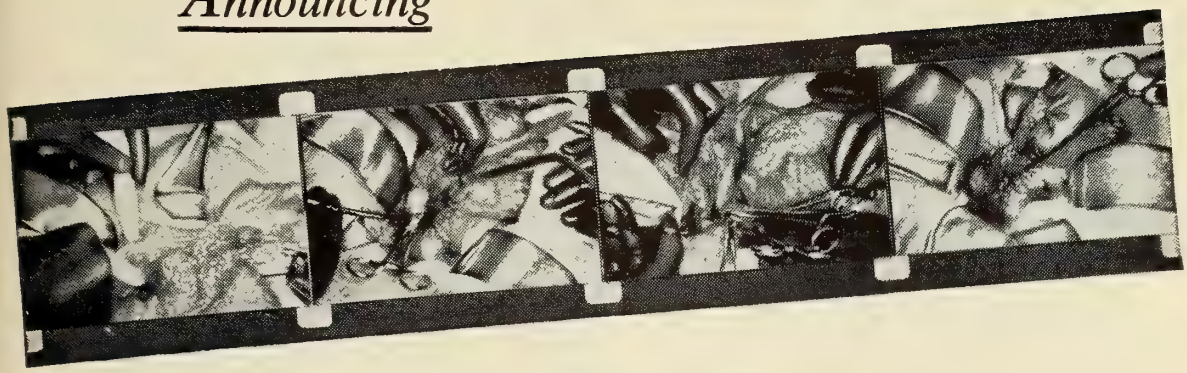
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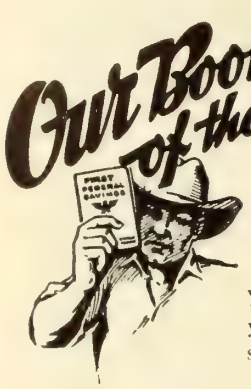
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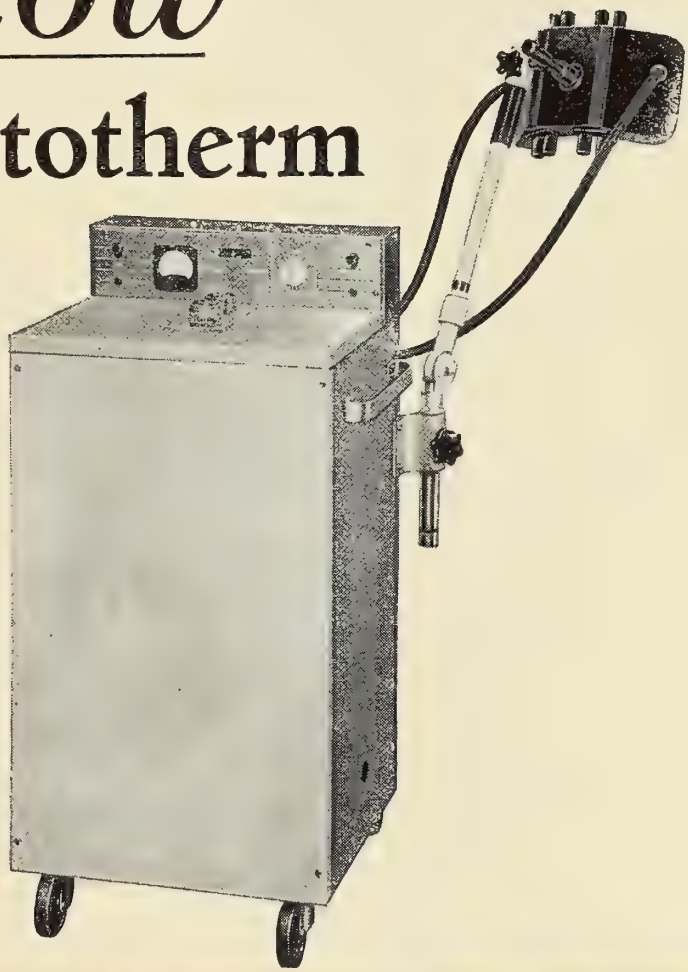
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| Bacterial resistance | Tubercle bacilli with increased resistance to Nydrazid have been isolated from patients. Resistant organisms can also be cultured in vitro, but this phenomenon is virtually eliminated when cultures are exposed to streptomycin and Nydrazid simultaneously. | The clinical implications of bacterial resistance are not completely known. Patients harboring resistant organisms may continue to improve under treatment. The question of delaying the emergence of resistant bacilli by combined therapy must await further study. |
| Toxicity | Toxic reactions to Nydrazid are chiefly due to stimulation of the central nervous system. They are negligible in the therapeutic dose range, except in patients with convulsive tendencies. | It appears probable that central nervous reactions to Nydrazid can be controlled by barbiturates. But with continued use of the drug, it is not known what sensitivity reactions may occur. |

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Vahlquist, B. and Hackzell, G.: Acta Paediatrica *38*: 622 (1949).

| NO. OF CASES | SEX | AGE AT ONSET | CYCLIC VOMITING | DURATION OF ATTACK | INTENSITY |
|---|---|---|---|---|---|
| 31 | 8 ♀ 23 ♂ | 3 yrs. (mean) | 3 out of 31 | 2½ hrs. | severe in all cases |

TABLE CONT'D

| NO. OF CASES | UNILATERAL HEADACHE | NAUSEA | FLIMMER SCOTOMA | VERTIGO | HEREDITY |
|---|---|---|---|---|---|
| 31 | 18 out of 31 | 31 out of 31 | 12 out of 31 | 6 out of 31 | 20 out of 31 |

(reference given above)

In a study of 400 adult migraine patients, it was revealed that 34% had suffered attacks before the age of 15.* These investigators concluded that childhood migraine was a much greater clinical problem than was previously believed and that psychodynamic mechanisms played an important part in the disease.

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*Katz, J., Friedman, A.P., and Gisolfi, A.: New York State J. Med. *50*: 2269 (Oct.) 1950.

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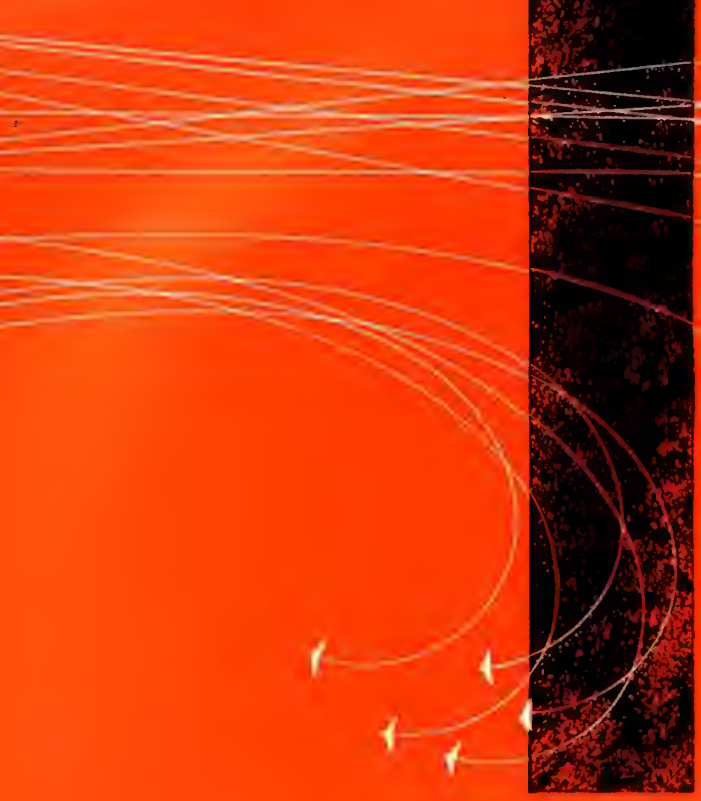
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ARIZONA MEDICINE
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# Original ARTICLES

## THE KOREAN WAR AS SEEN BY AN ARIZONA PHYSICIAN

PERRY W. BAILEY, M.D.
Phoenix, Arizona

The writer left a Phoenix practice 18 months ago, and was transported by the air-lift from Fairfield-Susuin to Japan. After spending six months as an ophthalmologist in Japan, he found himself with the 22nd Evacuation Hospital, at the seaport which lies at the proximal end of the railroad known locally as the "Atkinson, Topeka, and the Yong-Dong-po." At the 22nd Evacuation Hospital a great deal of the ophthalmology of the U. S. Eight Army has been centralized. To this point come most of the refraction problems, the conjunctivitis, the uveitis, the corneal ulcers, and a fair proportion of the gunshot wounds and shell fragment wounds. We also find it necessary to co-operate with the Prisoner of War Hospitals, some of the native Korean Hospitals, and the Korean missionary clinics.

Various articles have appeared in the literature which claim a high degree of efficiency for the medical service in Korea. It is shown that epidemic diseases have been prevented;—that the death rate of the wounded in action has been cut from the 4.5% of World War II to a figure less than half of that:—that research units have been successful in studying such problems as cold injuries, burns, hepatitis, and the dysentery group:—that brain surgery of the highest excellence has been done by men who have not hesitated to press their specialty as far forward as the foremost hospitals:—that exacuation is swift:—and that medical supply and blood supply is smooth and efficient.

These claims are true. These statements are correct. The medical officers of the present era may be proud of the service to which they belong. Men with memories of World War I and II are greatly impressed by the improvement which has been made. A great deal of credit must go to the late Major General Hume, and to the present and to the preceding Surgeon General.

In the field of the specialties a system of professional consultants has greatly improved the caliber of professional services. In ophthalmology, the consultant has been Lt. Col. Forrest Hull. He has been able to visit all installations, known all personnel, get men properly placed and trained, obtain adequate equipment, and keep ophthalmology in the Far East to standards which will make a favorable impression on the civilian profession.

The mass handling of eye casualties in the hospitals of Japan has been reported by Dr. Hull before the American Academy of Ophthalmology and Otolaryngology. We note that the methods used have been very similar to those used by industrial ophthalmologists for the accidents and injuries of peace-time. In the important matter of intra-ocular foreign bodies, localization has been done with the Sweet method, followed by the Berman localizer on the operating table. Extraction has been done with the hand magnet by the posterior route. The giant magnet, although available, has been used only three times. Sympathetic ophthalmia has been almost unknown, and it has rarely been felt necessary to enucleate on account of the fear of ophthalmia.

The casualties of "Operation Cleaver" came, in part, through the 22nd Evacuation Hospital. During a battle an Evacuation Hospital divides

itself into a series of surgical teams. The members of a team work eight hours in the operating theater with the newly admitted wounded, eight hours on the ward, and devote eight hours to sleep. (?). The ophthalmologist finds himself caring for every type of wound that comes anywhere near the eye. The supra-sternal notch is his theoretical low limit. Since the same soldier is often wounded in more than one place, and the other surgeons are busy, he is likely to debride a variety of wounds. In one case, I well remember, we extracted a foreign body from the orbit, then turned the patient over and did a magnet extraction of communist metal from deep in the soldier's ischio-rectal fossa.

It seemed from our experience that the best time to get foreign bodies was at once, when the wound tract could be followed. A small hand magnet made by Handeya in Japan was a great convenience in handling a rush of cases. Its pull was equal to the Lancaster magnet, and it was very handy during a rush period.

Our surgery followed pretty closely to civilian standards. Wounds of the sclera or cornea were sutured, and protruding uveal tissue was excised. Complete conjunctival flaps with purse string suture were used to cover the cornea. We found that commotio retinae was greatly to be feared. In contusions of the globe we were particular to enjoin bed rest, and to evacuate by litter with both eyes bandaged. Any wound that involved the neck, the throat, or even the nose presented danger when general anaesthesia was attempted, and we came to use only local anesthesia.

In addition to war wounds, the following items of interest were observed:

1. Epidemic hemorrhagic fever.
2. Trachoma and Koch-Weeks conjunctivitis among prisoners of war.
3. The Pusan leper colony.
4. The Korean National Police Hospital.
5. The missionary clinics.
6. The status of the native Korean medical profession.
7. The opportunities for professional training afforded the younger men.

One other item was not initially a matter of interest, but we tried to make it more pleasant by making a professional study of the subject. We are speaking of hysterical amblyopia.

Another paper is being prepared on the subject of malingering and hysterical amblyopia. In the interval between battles we found ourselves called upon to solve most of the refraction problems which came up in the theatre, and, along with the refraction problems came instances of malingering, of hysterical amblyopia, and of poor patient cooperation.

Morale has been decently good in Korea, and out-and-out malingering has been found in only about ten cases. For these we have an S. O. P. (Army jargon for Standing Operating Procedure.), together with mimeographed forms. When the luckless soldier has been definitely caught in intentional malingering, the medical officer says:

"This is a military order with mitnesses. Read that eye chart from top to bottom." So far, the malingerer has always read the eye chart after such an order.

Hysterical amblyopia is a different story. It will fit quite well into the classical description of hysteria by Charcot. There is a pre-disposition. The pre-disposition usually includes a rather low mental level, an underprivileged childhood, and a type of personality which is abnormally suggestable. There is an immediate exciting stress. The stress may be the dangers and discomforts inseparable from the military service at the front, or it may be the monotony and the separation from the family found in rear echelon duties. Actually, the most of the cases have come from the service troops in the rear. Some of the famous fighting divisions such as the 1st Cavalry and 24th Infantry have not had a case.

Lastly, there is a cause for the localization. The hysteria may involve any part of the body. If it involves the eyes or vision, it is because there is some remembered injury, or some genuine defect, which causes the localization to the eye. The combination of strabismus, amblyopia ex anopsia, and hysterical amblyopia in the other eye, is a very common sequence. The typical contracted hysterical field has been diagnostic point of most value to us.

There is a natural antipathy between hysterical amblyopes and optometrists. The amblyope is cherishing the delusion that he can not see. That delusion is of value to him. The optometrist knows that the patient can see, and the optometrist's belief is not a delusion. As we watch the participants in the refraction match, we can see the adrenalin rising and the muscles tensing as each one gets mad at the other. One Spanish speaking amblyope finally shouted at

the top of his voice: "No lo veo. ! ! ! ! - -" followed by a string of Spanish profanity.

It is of interest that the hysterical amblyope, after a long careful examination, and a careful explanation of the nature of his disability, always slams the door when he goes out. The same hostility which is stirred up by the optometrist may also be found when the patient is sent to the neuro-psychiatrist. The process of shattering the patient's cherished delusion is resented when the neuro-psychiatrist attempts it, and sometimes the psychiatrist himself gets mad, and may report the patient in uncomplimentary terms as a "malignant, mendacious, anti-social malingerer," or words to that effect.

In general, the hysterical amblyopes are disposed of by sending them to duty with rear installations. It is felt that the solution for these cases is chiefly non-medical, and involves careful and understanding leadership by man's immediate military superiors.

* * *

In epidemic hemorrhagic fever we had the experience of investigating an almost brand new disease. An intensive research was done by the Army in various centers, the reports of which will be published in due time. The outbreak has, however, quieted down. We do not know whether we will or will not get more material. I, myself, was able to see forty cases, with a view to the study of the ophthalmologic signs of the disease.

Army personnel were able to find Japanese reports of the disease occuring in the Imperial Japanese Army in Manchuria As described by Takami, this is an acute infectious disease of virus etiology characterized by an abrupt onset with high fever, headache, myalgia, hemorrhagic diathesis, albuminuria, and a leukemoid leukocytosis. It is presumed to be transmitted to man by the mite *Laelaps Jettmari, Vitzthum.* The host of the mite and the probable reservoir of the disease is the field rodent *Apodemus agrarius.* Kitano showed that the virus of the disease was capable of passing Chamberland candles 12, 13, 15, 19, and Seitz EK filter.

As the eye findings were studied, it was evident that this was not a disease with primary or even secondary eye involvement, and any changes seen in the eyes were secondary to the general medical condition. During the prodromal period there was a general congestion of superficial vessels of the mucous membranes. At this stage there was often a conjunctivitis, and several cases were initially admitted to the eye service of the hospital on account of this conjunctivitis. Early in the disease there was a history of blurring vision. Some observers have attributed this to a myopia. I have not been able to obtain an early case in which I could retinoscope a myopia, and the blurring of vision might be due to some other factor.

Subconjunctival hemorrhages are common. They appear often about the seventh to the tenth day, at a time when the blood coagulation time is moderately prolonged. The hemorrhage may be sudden, and follow an attack of straining or vomoting. In one case the hemorrhage came from ciliary vessels. In all other cases the hemorrhage was from the large vessels which come in from the canthi.

During the course of the disease, there is a period of anemia and of a nephritis with urinary suppression and azotemia. At this time, the fundus will show a yellow background characteristic of the anemia, and the retina will lose transparency, indicating an edema of the retina. At this time the upper eyelid is also edematous. One looks for exudates, and does not find them. Retinal hemorrhages have been found only once. In a hemorrhagic disease, the rarity of retinal hemorrhage is surprising. The fundus picture clears rapidly if the patient gets better.

* * *

Trachoma and Koch Weeks treatment among orientals has followed the lines advocated by Philips Thygeson. It is to be regretted that military necessity makes it impossible to fully utilize the material here for research. From the outbreak, however, we will be able to obtain some good color pictures of trachoma in its various stages. Since some of the patients die accidentally or from other causes, (in so large a population), we may be able to get some good pathological slides. We will be able to evaluate the effect of sulfa treatment, and to give a good comparison of the various local preparations available.

Trachoma has either not appeared among American personnel, or has not been allowed to reach clinically recognizable stages when it passed through the 22nd Evac. Some of the cases of conjunctivitis have appeared suspicious, and have shown inclusion bodies. We routinely give a two weeks course of sulfa combined with oral chloromycetin.

In handling patients who do not speak English, we utilize a phrase book which includes fourteen languages, (including Thailand and Abyssinian), and the contents include the words used for such commands as "Look up," "Look down," and "Don't be afraid." In the Suchon dialect of Chinese the idea for not being afraid is expressed by the term "Fang H'sin ba," which means literally "Let your heart be at peace." We will use this phrase in closing.

* * *

There are certain medical missions in Korea, including the Catholic "Maryknoll", and missions connected with the Baptist church, and other protestant denominations. They receive much help from the good nature of the Army and Navy personnel, but their patient load is tremendous and their need is great. Certain of the Lodges of the Elks have contributed to them, as well as other sources. A major need is for vitamins and for canned milk.

* * *

We have tried to get into professional relations with the Korean medical profession. Since we employ a considerable number of Korean doctors in the Prisoner of War hospitals, the morale of Korean doctors is important to us.

The Korean eye doctors are very good students when they have an opportunity. They are extremely anxious to obtain American medical texts and periodicals. They painstakingly translate my own little paper on conjunctivitis and such subjects. The thought of study in the United States is, to them like a dream of heaven.

The result of previous Japanese domination has been such that the Koreans have very little in the way of educated middle or upper classes. They badly need teachers, technical experts, and students sent abroad. They are eager for education. The same policy which McKinley and Taft instituted in the Phillipines might make the Koreans our natural allies, and make their government strong enough to defend itself against aggression, (communist or non-communist.)

The doctors form a natural contact between two civilizations, since doctors are usually internationally minded, and the most international type of doctor is the ophthalmologist. We hope that friendly relations toward the Korean profession may be an aid in the procurement of a lasting peace in Asia.

SUMMARY: This is a narrative discussion at first hand of the medical conditions in the United Nations Army in Korea, with notes on the surgery of war injuries, the eye signs of acute hemorrhagic fever, the diagnosis of hysterical amblyopia in soldiers, and an outbreak of trachoma among orientals. There are additional notes concerning the Korean medical profession.

Fang H'sin ba.

BIBLIOGRAPHY

Hume, Edgar Erskine, United Nations Medical Service in Korea. JSMA, v. 146, No. 14, 4 August/51, p. 1307.
Takami, Ralph. Epidemic hemorrhagic fever. Medical Section, GHQ FEC 13 August/51. (Mimeographed.)
Craig, John P. MC AUS Epidemic Hemorrhagic Fever, 406 Medical General Laboratory, February, 1951.
Thygeson, Phillips. Lectures on the Bacteriology of the Eye. (Given at Portland Maine.) Published by Ophthalmological Study Council, Ivie Road, Cape Cottage, Maine.

In the preparation of this paper thanks are due to Dr. Fred Williams of Phoenix, Ariz., (Capt., MC) who has done a lot of work on trachoma at Kojedo; to Dr. Charles A. Layton, Jr., (O.D.), optometrist of the 22d Evac. Hosp., to Colonel John Baxter, commanding the 22d Evac. Hospital, and to the Korean ophthalmologist, Dr. Kim Kwang Yun.

22d Evac. Hosp. APO 301, C/ postmaster, San Francisco.

# KAPOSI'S IDIOPATHIC HEMORRHAGIC SARCOMA

A. I. Ramenofsky, M. D., James D. Barger, M. D., Robert H. Snapp, M. D. and Louis G. Jekel, M. D.
Phoenix, Arizona

Multiple idiopathic hemmorhagic sarcoma was first described in 1872 by Kaposi, a Viennese dermatologist. It is a rare disease occuring in persons of Russian, Polish, Italian, and Jewish extraction. Ninety-four percent of the cases occur in men. The patients are usually more than forty years of age.

In approximately one-half of the cases the presenting symptom of the disease is a brawny edema of the lower one-third of one or both of the lower extremities. This finding may precede by months or years the appearance of skin lesions which usually are found first on the feet or hands and are usually symmetrically distributed. The skin lesions are polymorphous with macules, plaques, nodules, and tumors, any one or all of which may appear in the same patient. The lesions are reddish-brown or violaceous. The macules may resemble pigmented nevi; the plaques may resemble old stasic dermatitis; the tumors may be verrucous or angiomatous, the latter resembling granuloma pyogenicum; and the bluish-red nodular lesions present a striking similarity

Presented at the regular staff meeting of the Good Samaritan Hospital, Phoenix, Arizona, January 28, 1952.

to melanomas. Symptoms, which are rarely present, consist of slight tenderness or itching.

Involvement of internal organs, namely the gastrointestinal tract, liver, spleen, lungs, and lymph nodes, occurs in about ten percent of the cases. The extent of internal involvement is usually determined only at autopsy, but gastrointestinal hemmorhage, hepatomegaly, or splenomegaly may arouse suspicion. However, approximately only one-half of the cases with enlarged spleens showed actual sarcomatous lesions at autopsy, the remainder showing diffuse hyperplasia of the organs. Whether such internal involvement is a true metastatic process has been questioned by many observers, who believe that the disease is one of multiple primary foci, resembling in this respect mycosis fungoides.

In approximately forty-five percent of the reported cases there has been some evidence of diabetes mellitus, either a frank or latent diabetic state. However, adequate control of the diabetes has no beneficial effect on the course of the Kaposi's Disease.

The differential diagnosis of this disease includes granuloma pyogenicum, cavernous hemangioma, melanoma, and lymphosarcoma. The conclusive evidence lies in the histopathologic picture.

Microscopic examination shows the earliest lesion to be a cavernous hemangioma in which there are large bloodfilled spaces lined with endothelial cells. These proliferating endothelial cells invade the surrounding tissues and assume the appearance of fibroblasts. The appearance of a vascular structure is lost, and the fibroblasts invade the surrounding tissue and behave as a true malignant neoplasm. At this point a nodule appears clinically. Ulceration may occur. The lesion may be indistinguishable from a fibrosarcoma except for the fact that erythrocytes appear between the bundles of proliferating neoplastic fibrous tissue. Later there is peripheral infiltration of lymphocytes and macrophages with hemorrhage into the lesion itself.

The lesions in our patient show a tendency to mimic a fibroblastic type of tumor. One of the sections we examined showed the origin of the tumor from a fibroblastic type of cell lining the vessels. If one accepts the idea that the mesenchymal cells are toto-potential and that they have the ability to develop into different types of cells depending on the local situation as is seen in the malignant lymphomas and Hodgkin's Disease, then it may well be that the endothelial cells which proliferate here do take on properties of the primitive fibroblast.

Superficial roentgen therapy is the most efficacious form of treatment for Kaposi's Sarcoma. Small doses (75 r) of unfiltered or lightly filtered rays are administered at weekly intervals as needed, or up to the limit of the patient's tolerance. This sarcoma is very highly radiosensitive and the judicious use of superficial roentgen irradiation may prolong the patient's life for years. Radium has been used but is impractical because of the numerous lesions and large areas to be treated. The same objections hold for surgical excision and electrocoagulation. All other forms of treatment have been uniformly unsuccessful.

The disease follows a slow course with new lesions appearing as old lesions involute either spontaneously or due to therapy. It certainly is not always fatal. The patient may survive five, ten or even thirty years, and perhaps succumb to some other ailment. Five to ten years is the usual length of survival after the diagnosis is established, depending on the extent of internal involvement, and which organs are involved.

## REPORT OF A CASE

B. L., aged forty-six, of Russian-Jewish origin, presented himself July 9, 1951 complaining of a "corn" on the bottom of the left large toe. The lesion had been present two weeks, pain on walking had become progressively worse, and redness of the mass with swelling of the foot were noticed on July sixth. He consulted a chiropodist twice, but the pain and swelling became progressively worse, and the mass continued to grow rapidly.

Physical examination revealed the left large toe to be red, swollen, hot, and tender. On the plantar surface of the toe was a cauliflower-like mass the size of a hazel nut. The surface of the mass was red, tender, and friable. Bleeding was easily produced by light touch. On the dorsum of the same toe was a brownish plaque which the patient stated was growing larger. The foot was swollen and tender. There were numerous flat, brownish plaques on the anterior surface of the foot and ankle, varying in size up to about three inches in diameter. The tentative diagnosis was fungating carcinoma

with marked infection and cellulitis of the toe and foot. The patient was immediately hospitalized for treatment of the acute infection. Two days later, after the acute infection had subsided, a biopsy was performed. Microscopic examination of frozen and fixed sections were diagnosed lymphosarcoma. Roentgenoscopic examination showed no evidence of bony metastases in the foot.

Surgical consultation was held and the patient was told of the findings. Wide surgical excision was recommended and performed on July eleventh. A wide margin of normal tissue was included in the excised material. The wound was allowed to heal by granulation.

Subsequent microscopic examination of more tissue revealed the presence of Kaposi's Sarcoma. On the basis of this latter diagnosis superficial roentgen therapy was instituted. Treatments were administered every week or two, the usual does being fifty or seventy-five roentgens of unfiltered or lightly filtered rays. Under this program the patient has been relieved of nearly all of his pain and the lesions have shrunk markedly in size, in a period of eight months.

SUMMARY

Kaposi's multiple idiopathic hemorrhagic sarcoma is described and a case of this disease is reported.

## THE EMOTIONAL PROBLEMS OF CHILDREN

Hale F. Shirley, M. D.
San Francisco, California

It is becoming increasingly obvious that the greatest task which we as a world face today is that of building sound human relationships. From the standpoint of world affairs, unless peoples can learn to live and work together peacefully, we face a social upheaval frought with catastrophic possibilities. From the standpoint of the nation, the state, and the community, social progress and the welfare of their citizens depend upon the development of a working relationship between the various social and professional groups which is satisfactory to all. And from the standpoint of the individual, his happiness and effectiveness in living depends greatly upon the kind of relationships which he is able to achieve with his family, his fellow citizens, and his social and professional groups.

The building of sound human relationships, therefore, is one of the primary functions of the community and the state. It is not just the responsibility of the head of the government, the educator, the physician, the social worker, the clergyman, or the psychiatrist. It is the responsibility of every individual. It must be a cooperative project, in which every professional group and every community organization plays its appropriate part.

But the attainment of desirable human relationships in community and intercommunity living is impossible except as they are built upon sound foundations. And the foundations upon which such relationships are based are the interpersonal relationships as they have developed throughout the childhood of the individual, beginning with the father-mother and the parent-child relationships within the home and continuing through the teacher-child and peer group relationships.

It has only been in recent times that the emotional foundations of social living have been exposed to scientific curiosity and scrutiny. We have only just begun to understand sufficiently how constructive emotional relationships are built and what experiences produce faulty foundations for such relationships. Philosophers and historians of the past, with a few exceptions, were prone to start their thinking about human nature and hebavior with "man" as an adult. "Man," in the past, was largely thought of as the victim of his human nature, meaning mostly his animal nature, though a "soul" was usually postulated. The "soul," it seemed, was a precariously fragile aspect of the personality, likely to be overrun at any time by the biological urges, though at times maintaining the upper hand and even occasionally, in some rare individuals, eventually winning out in the desperate struggle for salvation. Thinking of this kind inevitably led to a pessimistic insistence that we can not change human nature. All we as a human race can do, it was thought, is to wait for the millenium or to mark time until the appearance of another mutation like that which occurred 100,000 years ago when Homo sapiens replaced the Neanderthal man.

Read before the 61st Annual Meeting of the Arizona Medical Association, Phoenix, April 30, 1952.

Such a conclusion was logical enough to those who had some familiarity with history until people began to understand the nature and meaning of childhood. Now, however, we are beginning to realize that raw human nature, as manifest in the healthy, newborn infant, is just as capable of civilized, peaceful, mutually satisfying, and creative life as it is of savage jungle life. We really have but to look about us and to think of the results of the better aspects of our culture, the many people whom we love and admire, to realize the truth of this statement. We can now, as a society, begin to think of the unhappiness, the hate, and the antisocial behavior we find in the world as being largely the result of social pathology which has had its deleterious effect upon the personality development of children. To state the matter in a more positive and hopeful light, it may very well be that in our growing knowledge of the personality development of the child and of the factors which foster normal personality development, we now, as a civilization, hold within our hands the key to human progress and destiny.

We now know, for instance, that children can arrive at adulthood without the ability to love, never having experienced it in their home living, and thus may live out their adult lives unable either to found a home based on love or to form satisfying human relationships in their everyday living. We now know that children can arrive at adulthood with feelings of inadequacy and inferiority so ingrained within their personalities because of their childhood experiences at home and at school that they never are able to develop fully their potential capacities. We know that children can reach adulthood with their sense of security and trust in themselves and their environment so undermined that they are motivated principally by their anxieties and use up most of their energy defending themselves from their anxiety. We know also that children can arrive at adulthood having learned to satisfy their normal human needs in ways so unacceptable socially that they are constantly in conflict with society. Such children too often arrive at adulthood with a distorted concept of the world, believing or acting upon the assumption that they must forever defend themselves against, if not actually fight, a hostile world. And finally we know —particularly we physicians know—that children can reach adulthood unable to find satisfaction in the world except through chronic invalidism of some kind and degree.

Every large community has thousands of people whose personalities by the time they reach adulthood are thus seriously distorted in some way or another. They are recognized, of course, as creating serious social problems. They are recognized because the care of civilization's human wreckage costs a tremendous amount of money. The damage which antisocial elements do to social living, however, is no less expensive, and money cannot measure the human misery which they cause.

The growing concern of an increasingly humane society has led to pressures which seek to build ever bigger and better psychiatric hospitals and facilities. There is no reason to question the need and the social value of these nor of the fine work they are doing, usually under terrific handicaps. But the question does insistently come up in regard to the wisdom of our focusing of attention and effort upon the salvaging of human wreckage when all the time, as a society, we are blithely and ignorantly creating it faster than we can deal with it. Has not the time come when we must all support, with our understanding and with our professional and financial resources, the development of those facilities which foster mental health?

We do not at the present time know with any certainty, it must be admitted, what can and what cannot be prevented in the field of mental health. As was true in the development of preventive medicine and public health, we must start with what we do know, develop methods which work, and achieve success as increasing knowledge and experience makes it possible. Even in child guidance work, it is difficult to know what we are actually accomplishing. And yet there is no question but that in child guidance work one does see, to a considerable extent, how personality deviations become started and what seems necessary to get the child back into socially desirable developmental channels. There is little question, too, but that in child guidance work there has been developed sufficient knowledge concerning the emotional and personality development of children that it should be put into actual living in the home, the school, and the community.

It is true that the factors which influence

personality development operate throughout the life of the individual, so that in knowledge, experience, breadth of interest, and effectiveness in living, the adult need not cease to grow. It is also true that there are developmental tasks to be achieved during each period of childhood, and that failure to succeed at the tasks of any one period undermines the child's capacity for tackling the normal problems of later childhood and adulthood. Yet just as truly as the human being attains half of his height in the first three years of his life (starting with conception), so he acquires the emotional attitudes and the basic adaptive techniques for his life during his first few years of life, perhaps during the first six or seven years. Preventive work, if it is to be effective, therefore, must begin with family living from birth on, and must continue well into school life.

For this reason and because of his close contact with the emotional relationships within the families of whom he takes care, the physician is destined to play a vital role in any mental health in a significant way. According to the psychiatrist who, it is true, may provide knowledge and methodology for such a program; I mean, rather, the pediatrician and general practitioner who see parents and children in their practice every day.

In the past few years, pediatricians have begun to be interested in the field of mental health in a significant way. According to the recent survey of the Academy of Pediatrics, somewhat over half of the visits to pediatricians and slightly less than one third of the visits to general practitioners have to do with the promotion of health. Pediatricians are beginning to feel that such health activities should include mental as well as physical health, since they are both but aspects of the same thing: the health of the child as a whole. More than this, studies have shown that in pediatric as well as in general practice, emotional, behavior, and social problems are present to some degree in about two thirds of the children seen and are the primary problems of concern in about one third. Studies of school health programs, also, have shown that nowadays the common, more serious, and usually untreated problems are emotional rather than physical. This has led many pediatricians to the conclusion that attention to the emotional and social problems of the children who come into their care is not a matter which is out of their field but is, on the contrary, nothing more than good pediatrics! Many of such pediatricians have begun to incorporate into all of their practice not only basic mental health principles but even some of the knowledge and skills of trained child guidance workers.

The author, at present, is undergoing the enlightening experience of taking part in two pediatric projects which are oriented in a mental health way. In the pediatric department with which he is associated, in addition to the usual general and special clinics found in most large children's services, prenatal, premature, well baby, well pre-school age, and boy and girl adolescent clinics have been established. Child guidance staff members, to the extent which limited personnel makes possible, as well as psychiatrically oriented pediatricians work along with the resident pediatric staff in all of these clinics, acting as consultants so that the pediatricians can do as much of the mental health work as they are capable of doing, and taking over for treatment only those cases which cannot be handled in a pediatric setting. Of 755 new patients recently studied in our pediatric outpatient clinic, at least 277 had emotional and social problems which needed attention, and 39 presented behavior problems only. Of these 316 cases, only 29 were referred to the child guidance clinic for treatment, the other 287 cases being given psychological attention by the attending physicians in the clinic. The other interesting project in which the author takes part is a convalescent hospital program for children with rheumatic fever which is staffed not only with pediatricians, nurses, a cardiologist, and a dietitian, but also with a social worker, an occupational therapist, a social group worker, a teacher, a psychologist, and a psychiatric consultant. At weekly staff meetings led by the chief of staff, a pediatrician, the emotional and social problems of both the child and his family are given attention equal to the physical.

But if we, as physicians, are to measure up to our opportunities for guiding the emotional development of children and for dealing with their emotional problems, we must have some understanding of the normal sequence of emotional development and the reasons why deviations occur. We will be more effective in dealing with the emotional and behavior problems

of the children we see in our practices, too, if we will think less of finding specific measures for the treatment of specific behavior problems, and will think more of whether or not the emotional relationship which the child has acquired with his parents, teachers, and other children are mutually satisfying. We will also be better able to evaluate the extent to which a child may be disturbed by thinking less of the behavior problems which he presents and more about the extent to which he is succeeding in solving the developmental problems of his stage of childhood.

During childhood, the human individual must achieve a number of developmental tasks of an emotional nature if he is to be prepared to solve successfully the ordinary problems of adult social living. He must, for one thing, grow from the complete dependency of early infancy upon his parents for the fulfilment of his physical and emotional needs to an independence of his parents but an interdependency upon his fellow man which is satisfactory to both himself and to society. He must grow from an organism which is primarily self-centered to one which is predominantly socio-centered with a capacity for love of others and a feeling *with* and *for* people outside of his intimate group. He must change from a creature which behaves solely on impulse to one which faces the world of reality and controls his behavior so that it serves the needs of the community as well as his own. To do this successfully he must acquire an image of himself which approximately fits his capacities, and an image of the world which approximates the actual reality. He must also acquire, through learning and experience, a number of adaptive techniques for satisfying his normal human needs in socially acceptable ways. And finally, he must acquire a system of values and a sense of right and wrong which will keep him out of the penitentiary, on the one hand, and yet will not be so exacting, on the other, that they keep him miserable because he cannot reach perfection or perform what is for him the impossible.

But these difficult tasks are not learned in one easy lesson. They are, instead, learned step by step, each period of childhood having its own aspect of the task to be mastered. The developmental sequence cannot be hurried, since each child has his own individual rate of development, but it can be facilitated by a wholesome emotional atmosphere in the home. It can also be thwarted by emotional deprivation and faulty parent-child relationships. By helping parents to know what the child is ready for at each stage of his development, and how to give their support to the child's efforts to advance to the next more mature stage of behavior, the physician is contributing to both the happiness of the home and the child's eventual attainment of emotional maturity.

The primary psychological task of the infant, the first year, is to acquire a basic feeling of security and trust in himself and his world through the successful establishment of his dependency upon his parents. The physician, during this period, has the opportunity of guiding the mother's fulfilment of the infant's basic physical and emotional needs, so that the baby feels secure and comfortable. There is often much the physician can do to prevent the mother from becoming locked in conflict with the child over eating, a conflict which does not benefit the child's nutritional state and which interferes with the development of a mutually satisfying mother-child relationship, which is so important for the development of the child's capacity for affection and his attitudes toward others.

As the child grows, his sense of security depends upon an increasing number of factors, in addition to the fulfilment of his physical needs and the prompt relief of his physical discomforts, among which may be mentioned the degree to which the mother is free of anxiety, the quality of affection which the mother feels toward the child, the extent to which the parents can accept the child as he actually is, the amount of freedom which they are able to give him, the amount of hostility which is engendered in the parents from their friction with him, and the consistency with which they manage him.

The need of the child for a feeling of security is emphasied here because the contrary situation in which the child is dominated by chronic anxiety interferes with his emotional growth. The anxious child is afraid to grow up. He clings to immature forms of behavior. The symptoms which chronic anxiety produces, in addition, are legion, and include physiological disturbances which in time may lead to physical dysfunctions and eventually to well established psychosomatic syndromes. Whatever the phy-

sician can do, therefore, to make the parent-child relationship a mutually satisfying and anxiety-free one from birth on is all to the good. For the child who has experienced great security in his early home life is the one who is most likely to become the secure adult, able to face the ordinary and even the extraordinary hazards of life.

In the second year of infancy the child begins to discover, to his own delight, that he has a mind of his own, and he wants to exercise it, at least to the extent of some physical independence. The parents are now faced with the necessity of limiting the child's behavior for his own protection as well as in the interest of the rights of others and the tolerableness of home living. The problems concerning control and autonomy are often unnecessarily complicated by a premature and overly aggresive effort at toilet training, which can best be delayed until the child is emotionally ready to respond. This second year of infancy then, is another critical period in which the physician can be of great help to the parents, especially in their efforts to find a suitable balance between overpermissiveness and overdomination, so that the child can begin to accept authority and yet continue to develop his own initiative and individuality too.

How authority and limitation are brought to the child in later infancy and early childhood is very important in the development of the individual's later attitudes toward authority of any kind. One sees, on the one hand, children who become cowed and over-controlled because of fear of their parent's authority, sometimes becoming both obsessive and compulsive in their efforts to control the hostility which they feel. On the other hand, one sees children who rebel, directly or indirectly, and who, as a result, never do acquire a comfort in working under someone in authority. One sees the extreme of this attitude in aggressive, delinquent children who are in rebellion against parental, school, and all governmental authority. Overaggressiveness and lack of inner limiting forces, however, can result from excessive lack of limitation in early childhood. A child who patterns his life after an overpermissive parent may not acquire the inner feelings which later should limit his own behavior.

During early childhood—from 2 or 3 years to 5 to 7 years—many normal problems of behavior present themselves to the parents and to the physician. By this time, too, the results of faulty parent-child relationships become manifest, relationships characterized by such parental attitudes as overprotectiveness or rejection and oversubmissiveness or overdomination. Emotional disturbances in the child at this period may thus result in delayed socialization, anxiety symptoms, or the development of overaggressive, hostile attitudes. During the latter part of this period, also, sexual curiosity arises, and for a time the child may have difficulty in his early attempts to accept his proper sexual role. With all of these problems, the parents, can often benefit from the informed, understanding, and objective help of the family physician.

The physician can be particularly helpful to the parents concerning the sexual education of the child. This is a matter which parents often find difficult to do without the emotional support of the physician. Yet it is important that the parents give the child the information he needs, both as to the anatomy and physiology of sex and as to what, in sexual behavior, is proper and socially permissible. It is important, too, that the child acquire this knowledge without at the same time acquiring feelings that sex is dirty, bad, abnormal, or threatening, feelings which may later arise to interfere with the individual's achievement of heterosexuality and a happy marriage.

By six or seven years of age, the child who has experienced a satisfying parent-child relationship and who has worked through his feelings of jealousy or rivalry toward his siblings or early playmates now becomes less adult-oriented and more peer-oriented. The child now becomes increasingly dependent upon his classmates and playmates for his emotional satisfactions and his standards of conduct. Undue prolongation of the child's emotional dependence upon his parent or teacher at this time may be an emotional problem for which the parent needs the help of the physician. For childhood anxiety or hostility, out of control at this period, can interfere seriously with school progress.

Besides the achievement of peer orientation at this period, the child also normally acquires habits in industry and application. Through the thrill of achievement he acquires feelings of self-confidence, and through the approval which he wins from accomplishment, he acquires feelings of adequacy and self-respect. Persis-

tent failure at this period can lead to loss of self-esteem and self-confidence and the consequent development of an attitude of defeatism. If this emotional problem develops, it is one with which the family physician can profitably become concerned. It is important to find out, usually with the aid of the psychologist, what the child's capacities actually are, so that the tasks expected of him are kept within his abilities, and he can also experience the satisfaction of achievement and social approval.

There is one more period in childhood when the knowledge and perspective of the family physician can often be of great importance to the parents, namely when the child is approaching or entering adolescence. At this time, the parents often complain to the physician that their child, who has always been docile and well behaved, is beginning to argue and rebel. They usually go on to explain that the child is losing interest in doing things with the family, keeps his plans to himself, and objects to any interference with his plans. Such parents need their doctor's assurance that this is normal behavior for this age. They need to know that one of the primary developmental tasks of the adolescent is to become independent of his parents. He is driven toward independence by powerful physiological forces, and for a while he is likely to go overboard in this respect. Usually he is worried and upset about it as his parents, and they both need the steadying influence of the family physician until the youngster has acquired the knowledge and experience necessary for him to assume safely the responsibilities which he desires for himself.

These are but a few of the situations in which the family physician can play a constructive role in keeping a home life happy and comfortable, and in helping the parents to maintain in the home an emotional atmosphere which is conducive to the normal emotional growth of the children. The physician gives this help largely by being interested in the family, by listening uncritically to their emotional problems, and by supporting the parents, through his understanding of their feelings as well as by his professional knowledge, to find the solution to their own problems which is possible for them. This does, of course, take time, and often the physician may feel that he has neither the time nor the training necessary to deal with the emotional problems of the family. The time is coming, however, when physicians, both in undergraduate or postgraduate courses, will receive better training in dealing with the normal emotional problems of family living. The time will doubtless come, too, when most people will be willing to pay to talk about their emotional problems, so that the physician can afford to devote time to this aspect of his practice. But until this time does come, the physician who makes it a point to become aware of the feelings of his patients will, because of this awareness, often know the appropriate thing to do and say to help them with their emotional difficulties.

There is one more function which the family physician can serve. He can become familiar with those resources in his community which can help him and the family to deal more adequately with the child's emotional problems. He can profitably become acquainted with key people in the school system, social agencies, and recreational organizations. He can learn how to make use of, and how to work with, the clinically trained psychologist, the social worker, and the psychiatrist. For as was said in the beginning of this paper, mental health is a community project, and its attainment is possible only through the cooperation of parents, teachers, doctors, and all community agencies. But in this cooperative effort, everyone agrees, the physician has an important role to play.

## NOTICE OF CORRECTION

W. Warner Watkins, M.D., Phoenix, whose scientific article appearing in the September, 1952 issue of Arizona Medicine was titled FRACTURES but should have read as follows: FRACTURES The Most Difficult Field In Radiology.

# ACUTE ALLERGIC CONDITIONS OF THE ABDOMEN
## A Clinical Report

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Obscure etiology frequently challenges the ingenuity of the doctor in his diagnosis of acute abdominal conditions, especially when he must decide whether the patient has an acute medical or an acute surgical disorder. The diagnosis may be made easier in some cases if it is kept in mind that an acute attack of the digestive tract may be the manifestation of a food allergy. Such attacks may simulate a performated ulcer, gall bladder or renal colic, intestinal obstruction, acute pancreatitis, appendicitis, and coronary or mesenteric thrombosis. For such acute allergic attacks I have used the term "acute allergic conditions of the abdomen". No doubt many emergencies which come to surgery, and in which no definite pathological lesion is found, represent this condition. The writer has never seen a patient with an acute allergic condition of the digestive tract who has not suffered from other definitely allergic conditions, such as seasonal or perennial hay fever, asthma, urticaria, eczema, migraine, or colitis, or given a positive family history of allergy.

All of us have seen cases of chronic dyspepsia, hyperactivity of the bowel with excessive rumbling and gurgling, excessive gas formation, intermittent diarrhea or constipation, so-called nervous stomach and bowels, gastric neuroses, and colitis, that are often, in my opinion, mild food allergy cases. I am certain that many people suffer a long time with chronic digestive tract symptoms, frequently seeking medical aid, when all that would be necessary for relief would be the elimination of some allergenic food to which they are sensitive. Occasionally, a hypersensitive individual unknowingly ingests an offending food or a larger than normally tolerated portion of an allergenic food, and a severe reaction occurs which is responsible for an acute attack of the digestive tract. The following case reports are illustrative.

### REPORT OF CASES

Case 1.—An engineer, aged thirty-nine, over a period of years suffered acute attacks of excruciating upper abdominal pain associated with collapse, a state of shock, and unconsciousness. He was hospitalized in various cities where at least a half-dozen examinations, including x-rays and electrocardiograms, were repeatedly negative. Diagnoses upon admission to a hospital varied between gall bladder and renal colic, perforated ulcer, acute pancreatitis, and coronary or mesenteric thrombosis. Usually, before a diagnosis was agreed upon, the patient recovered, and fortunately, surgery had never been done. Several times on discharge, he was told that he had no doubt passed a gall or kidney stone. Recovery always occurred in two or three days. During an observed attack he was in a state of shock and the liver was palpable and tender. Pain under the right ribs was excruciating. On the third day there was a subicteric tinge of the sclerae although he was recovering rapidly.

On questioning the patient and his wife, it was learned that he had perennial and seasonal hay fever, chronic dyspepsia with much rumbling and gas in his bowels, pruritus ani, and a long family history of allergy. After he had recovered he had another examination, including complete allergy testing. In addition to reactions to several pollens and other inhalants, he gave a 4-plus reaction to eggs and chocolate. It then became known that both of the last two attacks occurred on a Monday morning about forty-five to sixty minutes after he had eaten four eggs for breakfast. On the preceding days, he had spent the Sundays in the country and had brought home fresh eggs. He said, "They were so good I ate four". Since eliminating eggs and chocolate from his diet, he has had no further acute attacks in several years and his dyspepsia has improved. The pruritus ani and perennial rhinitis cleared up completely. Ingestion of only one or occasionally two eggs always caused a recurrence of the latter symptoms, but that was the limit of his tolerance lest he get an acute attack.

Case 2.—A white man, aged fifty, became acutely and violently ill with very severe abdominal cramps and mid-abdominal pain within twenty minutes after eating a hotel dinner. He soon developed severe diarrhea with profuse watery evacuations. These symptoms lasted about six hours and were followed by vomiting

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with collapse and complete inactivity of the bowels. A clinical diagnosis of intestinal obstruction with ileus paralyticus, on the basis of a possible volvulus or intussusception, was made by the attending physician, and the patient was immediately hospitalized. He gave a history of having had a similar attack six months before at which time he was hospitalized for five days. Abdominal roentgenograms showed no evidence of obstruction.

Several physicians in consultation for an hour considered surgical interference. On questioning the patient, it was revealed that he had suffered from hay fever, asthma, urticaria, eczema, angioneurotic edema, colitis, and severe pruritus ani. However, he was symptom-free as long as he was on an absolute milk-free diet. He had seldom eaten away from home in over twenty years. Just prior to the last two attacks he had eaten out, and on investigation it was found that he had unknowingly eaten foods containing milk. With epinephrine, antihistaminic drugs, and intravenous fluids, he improved rapidly and was up after three days. Before the history of allergy was obtained, he was considered to have had an acute surgical condition of the abdomen.

Case 3.—A white woman, aged forty-five, gave a past history of hay fever, asthma, colitis and chronic dyspepsia or indigestion for twenty years or more. For several years she suffered from frequent acute attacks of severe upper abdominal pain and cramps with "formation of gas pockets" which often required hypodermic injections for relief. Examinations by various physicians were always negative. She had been diagnosed as a gall bladder case with gastritis, duodenitis and pancreatitis, colitis, and gastrointestinal neuroses. During several of her severe attacks surgery had been considered, but she had refused because no definite diagnosis could be made and because she always recovered within a day or two.

On testing, she was found to be sensitive to several pollens and inhalants; food tests proved unsatisfactory. After trial elimination diets, it was found that when she was on a strict milk-free diet, her dyspepsia and colitis cleared up and the acute episodes subsided. On several occasions when she ingested milk, symptoms developed in a short time. The severity of the symptoms varied with the amount of milk she had taken.

Case 4.—A white woman, aged forty-five, presented a clinical picture similar to that of the first case, excepting that with acute symptoms of the digestive tract she was also asthmatic. She was known to have a long history of hay fever, asthma, and symptoms of the digestive tract. Fish always caused an allergic reaction shortly after its ingestion. At the time I saw her for the acute attack in question, she had not eaten fish but there was a platter of fish on the table. Someone had taken a portion of fish, used the same spoon to take some mashed potatoes and had left the spoon in the dish. The patient had taken some potatoes with the same spoon and received enough fish protein to cause a very violent reaction which required epinephrine. This relieved the asthma as well as the abdominal pain. Knowing this patient, the diagnosis was not difficult, but her severe abdominal symptoms could easily have been mistaken for an acute surgical condition.

Case 5.—A five-year-old girl had been taking oral pollen extract for treatment of hay fever. One night, after she had helped herself to several large spoonfuls of honey, she developed severe abdominal pain. With this history, epinephrine and Benadryl were administered, and she was relieved of all pain in about one hour. Next day, there were no after effects and she was perfectly well except for a stuffy and runny nose. The honey had, no doubt, contained enough pollen to cause an allergic reaction.

Case 6.—A six-year-old child complained almost every day of severe "stomach ache" and frontal headaches. As an infant much difficulty was encountered until milk was eliminated from the diet. Since the age of one year the child had seldom eaten foods containing milk as they always caused an acute flareup of abdominal pain with cramps, bloating, excessive gas and diarrhea with "scalding stools." The stomach ache and headache always seemed to go together. Carrots, citrus fruits, potatoes and coconut always caused acute attacks, although not as severe as did milk. The child also had perennial and seasonal hay fever and a strong family history of allergy in both parents.

This patient was one of the few seen that gave good skin tests to the offending foods and other substances with entirely negative tests to most of the things tested.

Strict elimination diet and treatment by hyposensitization injections of the offending in-

halants together with antihistamine medication and ACTH for the very acute stage brought this patient under prompt and satisfactory control. However, eternal vigilance was necessary to keep the child symptom free, but it could be done. As the patient grows older the severity seems to be lessening and the child might outgrow his allergy in large part if continued patience is exercised.

One patient, a fifty-five-year-old male, who at first was thought to have an acute allergic condition of the abdomen, was hospitalized and emergency abdominal roentgenograms were taken. Free air was present under the diaphragm, and, at operation, a perforated ulcer was found. No previous ulcer history could be obtained, but he was known to have been an allergy patient for many years.

Almost any organ of the body can be the shock tissue in an allergic reaction. In the first case, the shock tissue was the liver. An acute liver swelling may cause excruciating pain, as the inelastic hepatic capsule is quickly stretched by the acute allergic edema of the liver tissues. In such a case, there is a great deal of absorption of the offending protein, either completely or partially digested, into the portal circulation, and it is carried directly to the liver. Absorption of an incompletely digested or undigested allergenic substance is more likely to cause acute symptoms of the biliary tract in a previously sensitized liver. In such instances, there is the usual antigen-antibody reaction to account for the allergic condition. In this case, the patient had a tolerance for one or two eggs and suffered no more than the customary dyspeptic symptoms, as previously described. Here, there was probably absorption of native egg protein, as well as an excessive amount of egg, due to the large quantity eaten.

In the second patient, the shock tissue was the intestinal tract. The direct contact of the bowel with the offending food caused a severe enough reaction to lead to symptoms of intestinal obstruction and ileus paralyticus. Here, there was probably a combination of smooth muscle spasm in the intestinal wall and an acute allergic edema of the mucosa.

Although acute allergies of the digestive tract are usually due to foods, they can be caused by ingestion of drugs, oral pollen extracts, and sometimes by parenteral injection of allergenic substances. In this type of case, the tissues of the digestive tract have been previously sensitized to the offending allergens.

In the differential diagnosis of such cases as described, the history is most important. Nearly all cases will give a history of other allergic manifestations or there will be a family history of allergy which may give the clue. Therefore, to suspect an acute abdomen of being on an allergic basis, the physician must be allergy-conscious. No doubt the etiology of colic and acute symptoms of the digestive tract in infants and children is frequently due to an allergy to food.

These patients, be they infants, children or adults, are usually nervous and restless individuals. They are irritable and sleep poorly and often complain that they "just don't feel good." Once relieved they are most grateful.

During an acute attack, these patients will usually have little fever, if any, even though they are violently ill. The second patient described had a temperature of 100.4° on the second day. The white count is usually within normal limits, or it may be low at first and moderately elevated later. There is usually little or no abdominal muscle spasticity present, although there may be moderate spasticity, but rarely if ever marked or board-like rigidity. An acute abdominal attack with absence of rigidity is strong evidence of an acute medical abdomen rather than an acute surgical abdomen. Other laboratory tests and roentgenograms will usually be negative; however, an eosinophilia may be present in the blood or bowel mucus.

Too much reliability cannot be placed on skin tests because food extracts notoriously do not react in a large percentage of the patients with food allergies. Elimination diets are much more satisfactory in determining the offending foods. In the cases herewith reported, the egg- and fish-sensitive patients gave good skin reactions, but only one of the milk-sensitive patients gave positive skin tests to milk or lactalbumin.

It must be remembered that an allergic individual may have an acute abdominal condition due to the usual or common disorders which are in no way related to allergy. In some cases, when a definite diagnosis is not possible, surgery might necessarily be resorted to in order to be certain and safe.

## SUMMARY AND CONCLUSION

1. Food allergies may cause acute reactions

of the digestive tract and may simulate a perforated ulcer, gall bladder or renal colic, acute pancreatitis, intestinal obstruction and ileus paralyticus, and coronary or mesenteric thrombosis. In such cases, the term "acute allergic conditions of the abdomen" has been used.

2. Six cases are reported as illustrations.

3. When the gastrointestinal tract or liver is the shock organ, an acute attack may be mistaken for an acute surgical abdomen.

4. In any acute abdominal condition, where the diagnosis is not clear, the physician should be allergy-conscious and should question the patient or family about a past history of allergy, as there will nearly always be other allergic manifestations, present or past, to give a clue.

In determining the offending foods, elimination diets are more satisfactory in most cases than skin tests. Negative tests do not rule out the possibility of food allergy.

6. In some cases the administration of epinephrine and antihistaminic drugs will serve as a therapeutic as well as a diagnostic measure. ACTH and cortisone are valuable new drugs to be considered in the immediate treatment for relief of acute allergic conditions of the abdomen.

7. It must be remembered that even severe food allergy patients can have an acute abdominal condition from the more common non-allergic causes. All patients with acute abdominal symptoms must be studied carefully, and in some cases surgery may have to be done to be on the safe side.

## PRINCIPLES IN ONCOLOGY

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*Introduction*:—In order to learn anything in meetings it is mor profitable to discuss problems met in experience than to boast of accomplishments. I wish to discuss some of the princimples and the changing concepts in the control of cancer.

*Oncology*:—For many years cancer has been largely problems for the surgeons, the radiologists, and the pathologists, working too often more or less independently. The accumulated knowledge of cancer, acquired with such tremendous efforts and often in a hazardous and costly manner, has emerged as a special field in medicine known as cancer and allied diseases, or briefly as oncology.

Oncology is defined as the study of true tumors or neoplasms. For years oncology has been ridiculed and had much opposition, organized and unorganized, lay and professional. The failure to recognize and fully appreciate this specialty continues to retard progress and to reap a harvest in the haphazardous manner of dealing with cancer in the past and even into the present time. Cancer should not serve simuly as an occasional side-line in surgery, in radiology, or in any other specialty; more study and effort are needed; this is contrary to the teaching that every physician should diagnose and treat cancer.

It is true that oncology cuts a cross-section through most medical and surgical specialties. Therefore, all specialists, including the orthopedists and the urologists, sometimes need the help and co-operation of the oncologist—just as much as he needs th help of other specialists.

*Pathology*:—More attention should be given to the pathology of tumors, the foundation of oncology. The study of tissue cells of a neoplasm establishes the cell-type and frequently the degree of anaplasia or malignancy. The grading of malignancy of tumors, if correctly done, is often an important guide in the clinical management of the disease. Cellular pathology, introduced by Virchow 100 years ago, has not made as rapid progress as expected; the recent introduction of smears for cancer has helped by emphasizing the importance of cytology.

The smears may be valuable in screening tests for cancer, but tissue diagnosis is usually required before radical surgery or irradiation is undertaken.

To do a biopsy of every lesion suspected of being cancer is scientifically correct; but it is not always necessary, desirable, nor to the best interests of the patient. Much depends on where, how, and when the biopsy is performed. Many skin lesions can be recognized clinically as cancer, and biopsy is often done merely for confirmation or for statistical purposes. When a biopsy is performed, the patient should be treated immediately without weeks of delay.

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*History and Physical Examination*:—History and physical examination in cancer are as important as in other diseases. The physician's knowledge and experience with tumors help him in arriving at a diagnosis of cancer or probable cancer and in deciding what measures are actually needed in the final diagnosis and treatment.

The cancer patient should be told, gradually and tactfuly, the truth about his disease; certainly the relatives should know the whole truth. The shock of the truth is usually over in a few days, and the patient becomes more appreciative and co-operative so that proper and sufficient treatment can be given. If the patient is not told the truth, he feels that th doctor is either deceptive or doesn't know, and keeps on going elsewhere until some doctor finally explains the diagnosis. The most valuable time is lost and the disease is progressing into the incurable stages and death. Several patients are now dead largely because no one was supposed to tell them the nature of the disease and what ought to be done about it. If the physician is too frightened to tell the truth, he had better ask for consultation.

*Surgery*:—Surgery in cancer is done for diagnosis and/or treatment. On surgical exploration of the body cavities, effort should be made to obtain appropriate material for microscopic examination in every case if at all possible.

When cancers are operated upon, it is of immense help to have the surgical pathologist present to examine the tissue microscopically during the operation when he can be of the most service to the patient. Immediate tissue diagnosis usually gives the surgeon the cell-type of the tumor and the degree of anaplasia, which are guiding factors in deciding the extent of the operation and subsequent treatment. It has been said that breast lesions should not be operated upon unless such facilities are available. The pathologist should be used as a consultant in disease rather than as a laboratory microscopist.

The effectiveness of surgery in producing a cure of cancer depends entirely on complete removal of all the cancer cells as well as the cancer. A wound may look surgically clean and contain numerous cancer cells which insure prompt recurrence of the malignant tumor. The mental grasp of the disease should dictate the surgical technique.

If it is decided that the patient should have both surgery and irradiation, there should not be too much delay between administration of the two kinds of treatment; the optimum time must be observed, usually within 2 to 6 weeks.

Surgery is also used to remove the residual tumor, the irradiated and perhaps damaged tissue, and to repair the tissues destroyed by heavy irradiation or by the cancer itself. Such operations are undertaken after the activity of the cancer is under control. It is futile to attempt surgical repair of tissues containing actively growing cancer.

*Irradiation*:—Ionizing irradiation kills or incapacitates the cancer cells in situ; that is the objective regardless of the method and means employed—usually x-rays and radium. It is used as the sole treatment or in combination with surgery.

The degree of radio-snsitivity of the tissues varies with the cell type. Attempts have been made to grade the radio-sensitivity of tumors on microscopic examination as a help in irradiation therapy. It has been found that the so-called radio-sensitivity of tumors is about as variable as the operability and is dependent on the means and method of treatment as much as on the nature of the cancer. Some aspects of radio-sensitivity can be ascertained by pathological examination, such as the cell-type, degree of anaplasia, and amount of fibrosis, but patients as well as tumors vary greatly in the response to irradiation, and the judgment of dosage has to be left to the radiologist.

Irradiation therapy has been much abused and badly maligned. It has been abused in such manners as giving too small or too large doses, in using 200 kv. machines for superficial basal-cell epitheliomas, etc. If 5% of the reports of irradiation burns in the lay and medical press were true, irradiation therapy should be discontinued or severely limited to those who are qualified to use it. The disease is often forgotten. To tell a patient that he was "burned" with x-rays is about the same as telling him that he was "butchered" by the operation.

Therapeutic radiology is definitely a large clinical field and not an isolated laboratory procedure. The radio-therapist gets more help from a discussion of the patient's condition and nature of the disease than from telling him how many treatments or how much irradiation to give the patient. It is also wrong to tell the

patient to get a few or some x-ray treatments when a whole long series of carefully planned treatments is the major item in the possibility of cure.

It is most regrettable that pre-operative irradiation has largely gone out of style in some localities. Pre-operative irradiation is still urgently needed and serves a most useful purpose in some cases, when properly employed. In dealing with fast growing or rapidly metastasizing cancer, the best treatment is irradiation first, before surgery, in an attempt to get the disease under control, and then determine whether or not any surgery is indicated or possible. That is the same principle used in dealing with acute infections.

*Example of Pre-operative Irradiation*: The case of Mr. G., a white male, age 58, who came in by ambulance on June 13, 1947, and was barely able to walk. He had had a thorough study elsewhere resulting in a diagnosis of carcinoma of the left kidney. He had lost 30-40 lbs. in weight, was toxic, anemic, weak, and cachectic.

At this time x-ray films of the lungs were negative. At first only a few palliative x-ray treatments were considered, starting with 100r to one area. He improved so rapidly that irradiation was continued until he had had 2185 r/air to each of 2 areas, anterior and posterior regions of left kidney. Clinical improvement continued, and nephrectomy was performed by the urologist about two months after irradiation. The diagnosis of adenocarcinoma of the kidney was confirmed by the pathologist. The patient has now been well for almost five years.

*Example of Post-operative Irradiation*: Whenever there is any possibility that all of the cancer has not been removed surgically and the patient cured, post-operative irradiation should be considered.

The following case report will show that sarcoma does not always mean certain death:

Mrs. W., a white woman, age 29 was first seen in 1942. Sh had a history of having a large tumor mass in left groin for 10 months. A biopsy was done first and the pathological diagnosis was fibrosarcoma of low grade malignancy. On consultation, the x-ray men advised that in this type of lesion their experience with irradiation therapy has shown little or no result. In view of the fact that no benefit could be anticipated, and in view of possible undesirable complication, irradiation therapy was not advised. The tumor of the left groin was removed surgically on Feb. 11, 1942, two weeks after the biopsy, and measured 12.5 cm. in length and 3.75 cm. in diameter, filling the left inguinal canal and extending above and below it. The peritoneum was not opened, but enlarged lymph nodes could be felt deep in the pelvis. It was considered unwise to try to remove these nodes because of their extensive involvement.

The patient came to Tucson and in Sept. 1942 consulted a doctor about a tumor mass, approx. 5 cm. in diameter, developing in the lower left abdominal wall, half way between the unbilicus and the inguinal canal; this tumor was excised surgically and the pathological diagnosis was fibrosarcoma.

She was first seen by us on Nov. 14, 1942, when she had recurrences in the lower left abdominal wall, a ridge along the crest of the left ilium, and induration under the incisional scar in the groin. X-ray films of the chest were then negative. X-ray treatments were given to both areas, left pelvis and lower abdominal wall, 200 r/air daily to each area to a total dose of 2448 r to each port, using 200 kv. and 1 mm copper filter.

Recovery was slow. A year later she complained of pain in the back, left pelvic bones and hip. A second series of x-ray treatments were given, total of 2118 r/air to each of 2 areas, anterior and posterior left pelvis, and 800r to lateral left pelvis. The patient gradually recovered and resumed usual duties.

In Jan. 1947, she gave birth to a normal baby. She had two small areas of telangiectasia near the scar in the groin which caused no symptoms.

On April 9, 1952, she reported that the menses were regular and normal. She had twins 3 years ago (1949) and they are normal and healthy.

*Incurables*: We should do all we can for the cancer patient, but intensive treatment in hopeless cancer cases is not advocated. However, even far advanced cases such as carcinoma of the stomach and lung metastases from osteogenic sarcoma have obtained considerable relief and comfort for thre months or more from x-ray therapy. Apparently incurable cases of carcinoma of the cervix and cancer of the ovaries have been practically normal for as long as four yars following palliative irradiation treatments, and then died from cancer.

*Follow-up Examinations*: After the patient has been treated and is apparently free from cancer, he should have check-up examinations every two months for several years. Follow-up examinations every 6 months, as so widely and universally advocated, are too far apart; cancer can recur and grow to a large size and into the incurable stage in 3 months.

*Experimental Therapy*: Experimental therapy in cancer is justifiable only with the patient's consent and full knowledge of the nature and stage of his disease—and after the proved methods of treatment, surgery, radium and x-ray therapy, have failed.

The use of hormones in the palliative treatment of some cancers has been found useful, but no cures have been produced. The same may be said of chemo-therapy and the radio-active isotopes; radio-active phosphorus is useful in polycythemia vera.

Ultra-radical surgery (eviscerectomies) is still experimental, and the salvage of the otherwise hopeless cancer cases is small. The procedure has helped to make the less radical operations more thorough, and has added to our knowledge of tumor pathology.

*Economics*: For years money has been collcted from the public to help in the control of cancer. The major portion of such funds should be spent on the actual care of the cancer patient. The doctor, who does most of the work, should get a little help in the care of some of the charity patients. Public health education and research are necessary and desirable, but in this state the actual treatment of the patient should have priority.

## CONGENITAL HIPS IN THE PRACTICE OF EVERY PHYSICIAN

Harold E. Crowe, M. D.
Los Angeles, California

In spite of the fact that Dr. Putti in Bologna about 1929, and again Dr. Faber in Munich in 1937, called attention to the importance and possibility of early diagnosis of congenital his disease; this problem has been largely overlooked throughout the United States, except among physicians specializing in this field.

The finest programs of early diagnosis, early treatment, and excellent results have been carrid out in northern Italy, western Czechoslovakia, and in the Scandinavian countries. While much of this material has been published in the United States, it is still not widely known.

The thing which brought the subject sharply into focus was, the finding in 1937 by Faber of Munich, that there seemed to be a definite hereditary character in the development of the congenital hip which is probably best spoken of as congenital dysplasia of the acetabulum. It seemd to take the authority of a dictatorship to make Dr. Faber's work possible, in the sense that he was able to order relatives to appear for x-ray irrespective of their wishes in the matter and so was able to site the interesting case of a child with a congenital disclosation of the hip who in his medical history denied having any relatives with hip disease. However, having suspected that many cases of congenital hip went on to apparent normal adult life, but could be recognized by x-ray, it was possible to order 150 relatives of this child to appear for x-ray studies. Among the 150 relatives of one youngster he demonstrated nine true dislocations of the hip and 23 of the cases which are called predislocations or subluxations, in which the acetabular roof had developed sufficiently to permit weight bearing without any marked handicap but in which a definite defect is demonstrable by x-ray.

The most interesting part of this study, from point of view of the welfare of the community, is the problem of the 23 persons among the 150 relatives who had hips which they had supposed were normal, in which a failure of satisfactory development of the acetabular roof was present so that an inadequate weight bearing structure was present although entirely asymptomatic through the early years of the patient's life.

Since the recognition of this type of congenital hip as one which is not quite sufficiently severe to have a true dislocation, we have commenced to recognize these patients in their middle years when they should be at the peak of their productive life, developing severely disabling degenerative changes in hip joints which they had supposed were normal up to age forty-five or fifty. This type of degenerative joint change has even been observed in people in their middle twenties who had been

Read before the 61st Annual Meeting of the Arizona Medical Association, Phoenix, May 2, 1952.

relatively athletic youngsters during college days. Such hips, once they commence to produce symptoms, will be productive of pain which can be extremely severe and very disabling in the sense that the person in the course of walking is suddenly caught by an acute pain deep in the groin which is sufficient to stop motion irrespective of whether he may be crossing traffic lanes or in a position where his footing is decidedly precarious and motion is necessary for safety.

The appearance of disabling hip disease during the middle years of life when the patient's children are usually ready for college and consequently most in need of financial help, and at a time when the worker should be at his best from point of view of wage earning and contribution to the community in the way of production, is a serious problem and one which should not exist if early diagnosis and simple early threatment might become the rule rather than the exception.

It is now quite simple to diagnose these hip dysplasias in the first three months of life. The posture of the child's lower extremities, in the sense that they are held adducted instead of widely abducted as an habitual posture, and differences in the creases at the gluteal fold, or groin fold, are signs which are very obvious and easily seen by any physician. In case these signs are observed it is quite simple to take an antero-posterior roentgenogram of the pelvis and demonstrate that a transverse line drawn over the upper tips of the ischial shadows will make an angle with a line drawn along the acetabular roof which is well above the normal angle for the inclination of this bone shadow. In studies of many newborn pelves by x-ray the Scandinavians seem to have demonstrated quite definitely that the newborn child should have an angle which is 30 degrees or under at the time of birth and that this angle should come down to 26 degrees by the time the child is four months of age. This angle is very simple to measure and seems to have a definite importance in the early recognition and prognosis of dysplasia of the acetabulum.

Treatment in this disturbance in the hips of infancy is simple. Any technique which will permit maintenance of wide abduction of the thighs at all times, except for the period of a bath, will produce complete recovery in almost all cases without any other treatment so that the youngster can anticipate normal hips throughout his lifetime. The infant diagnosed in the first three months of life and treated during the first year of life can usually anticipate perfectly normal hips without future disability.

In presenting this subject to the General Meeting of the Arizona State Medical Society, one case is presented which seems to settle the argument about the importance of the angles of acetabular acclination in infancy. A newborn baby, being the grandchild of a very prominent surgeon, was X-rayed shortly after birth in one of the leading hospitals in Los Angeles, apparently simply because of the fact that the grandfather was an important man, the child having no obvious disturbance which anyone had recognized. After the X-rays were taken it was discovered that the child had only eleven ribs on each side. There was a great deal of emotional storm over the fact that the first rib was congenitally absent and that the child's upper lung was exposed to trauma and consequently its life evpectancy was probably short, all of which was a tempest in a teapot which had no background in fact. It was easy, studying these original X-rays, to discover that the child actually had a normal first rib and that the absent rib was the twelfth which is not an uncommon congenital anomaly. However, in the original films, by accident, the pelvis had been included in one of many X-ray pictures and in these pelvic films it was possible to discover that the angle of the acetabular roof on both sides was 45 degrees. Subsequently, due only to the interest of a curious mother, it was noted that somehow one lower extremity appeared to be different from the other. This resulted in consultation with an orthopaedist who saw the obvious difference in the length of the gluteal fold and groin fold on the right side, in which the head of the femur had started to migrate out of the acetabulm, while the opposite side having started with the identical X-ray findings was developing normally without any future disturbance to be anticipated. At this point the child was treated simply by placing a pillow between the knees, the pillow being water-proofed and held in place by suspenders over the baby's shoulders so that the limbs were kept in wide abduction constantly except for the time the child was in her bath. At the end of five months the right hip, which had started to form a false aceta-

bulm and was migrating toward complete dislocation, was identicel with the opposite hip with the result that at the age of ten months the child now has two normal hips.

The reason for this presentation is the fact that early diagnosis and simple treatment will prevent serious physical handicap. Since this diagnosis is usually easy to make and the treatment is so simple in the first few months of the child's life, we have really now very little excuse for overlooking the diagnosis and instituting treatment early enough to produce good results, as compared to fair results we formerly achieved when the diagnosis was routinely made after the child had started to walk.

## AMERICAN COLLEGE OF ALLERGISTS

PITTSBURG, PA. — Excessive amounts of of vitamin $B_1$ (thiamine hydrochloride) may cause serious circulatroy distrubances, according to Dr. S. H. Jaros in a paper jointly prepared by himself and two co-workers, which he read here today at the opening session of the Eighth Annual Congress of the American College of Allergists.

As chief of the Allergy Clinic, Grasslands Hospital, Valhalla, New York, Dr. Jaros collaborated with W. L. Wnuck and E. C. DeBeer, both of the Wellcome Research Laboratories, Tuckahoe, New York, in a report which described how the three men produced vasomotor collapse in anesthetized dogs by administering large doses of the vitamin, one of the great health builders of today.

Although infrequent, temporary, and no cause for public alarm, the unfavorable effect of vitamin $B_1$ in undue quantities is similar to that caused by histamine, Dr. Jaros said. He pointed out that, despite wide use of $B_1$, only a few unfavorable reactions to this vitamin have been reported to date. These few, he said, have invariably been ascribed to allergy — a conclusion he now "gravely doubts" in the light of new findings.

## PERSONAL NOTES

*Dr. Louis G. Jekel,* Phoenix, attended the annual meeting of the Pacific Dermatological Association. Held at San Francisco, California August 29-31, and was elected Vice-President of the organization for the coming year.

## Reserve Officers To Receive Credit Points For Attending Association Of Military Surgeons Annual Meeting

Reserve credit points may be earned by medical service Reserve Officers for attendance at the daily sessions of the forthcoming 59th annual meeting of the Association of Military Surgeons the Department of Defense has announced. Eligible medical officers of the Army, Navy, and Air Force Reserves may participate, and the authorization covers physicians, dentists, veterinarians, nurses, Women's Medical Specialist and Medical Service Corps officers.

The various sessions of the meeting, which will be held at the Statler Hotel in Washington, D. C., November 17-19, under the presidency of Major General Harry G. Armstrong, Surgeon General of the Air Force, are recognized as being devoted to subjects having direct military application. Therefore, it will be an excellent opportunity for Reserve Officers to be brought up to date on the latest developments of military medicine.

Point credits will be awarded on the basis of one point for each day of attendance, provided meetings attended total more than two hours. Registration for point credits will be handled by representatives of Second Army, Navy Bureau of Medicine and Surgery, and First Air Force. Properly authenticated reports will be rendered to all Army Headquarters, Naval Districts and the Reserve Recording Unit, and Numbered Air Forces.

*Note*: Prepared and forwarded for your personal information and that of the membership.

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# THE *Secretary's* MESSAGE

## RECOGNIZE THE POWER OF YOUR VOTE

ONE MORNING IN 1844, A GRAIN MILLER IN DE KALB COUNTY, INDIANA, WAS WALKING TOWARD HIS MILL. IT WAS ELECTION DAY BUT HE HAD WORK TO DO THAT WOULD KEEP HIM BUSY ALL DAY AND HE HAD DECIDED TO FOREGO CASTING HIS BALLOT. BEFORE REACHING THE MILL HE WAS STOPPED BY FRIENDS AND PERSUADED TO GO TO THE POLLS. IT SO HAPPENED THAT A WINNING CANDIDATE WON BY JUST *ONE* VOTE—AND THE MILLER HAD VOTED FOR HIM.

THE DE KALB MAN CAST THE DECIDING VOTE SENDING EDWARD ALLEN HANNEGAN TO THE UNITED STATES SENATE WHEN THE INDIANA LEGISLATURE CONVENED (UNTIL 1912, LEGISLATURES ELECTED U. S. SENATORS), AND WHEN THE QUESTION OF STATEHOOD FOR TEXAS CAME UP FOR VOTE, THE RESULT WAS A TIE VOTE; BUT SENATOR HANNEGAN, PRESIDING AS "PRESIDENT PRO TEMPORE" OF THE SENATE, CAST THE DECIDING VOTE IN FAVOR OF ADMITTING TEXAS. THUS, THE MILLER'S VOTE AFFECTED THE DESTINY OF THE WHOLE STATE OF TEXAS.

OHIO'S 25 ELECTORAL VOTES WENT TO THE SUCCESSFUL PRESIDENTIAL CANDIDATE IN 1948 BY SO SLIM A MARGIN THAT A SINGLE ADDITIONAL VOTE IN EACH OF ITS VOTING PRECINCTS COULD HAVE REVERSED THE RESULT AND CHANGED THE POLITICAL DESTINY OF OHIO. POSSIBLY THE NATION OR EVEN THE WORLD.

ONLY HALF THE AMERICAN PEOPLE OF VOTING AGE (48 MILLION OUT OF A POSSIBLE 95 MILLION) VOTED IN THE 1948 PRESIDENTIAL ELECTION. ONLY 20% VOTE REGULARLY IN ALL ELECTIONS – LOCAL, STATE AND NATIONAL.

EVERY MEDICAL DOCTOR AND HIS FAMILY *MUST VOTE* THIS COMING PRESIDENTIAL ELECTION.

# Editorial

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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.

2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. (See MEDICAL WRITING by Morris Fishbein.)

3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.

4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.

5. Submit manuscript typewritten and double-spaced.

6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.

The Editor is always ready, willing, and happy to help in any way possible.

## EDITORIAL

Of interest to the medical profession is the recent announcement of the resignations of Elmer L. Henderson, M.D., Louisville, as Chairman of the A.M.A. Coordinating Committee, and Clem Whitaker and Leone Baxter as directors of the A.M.A. National Education Campaign.

Dr. Henderson, a past president of the American Medical Association, and two other A.M.A. past presidents—Dr. Ernest E. Irons, Chicago, and Dr. John W. Cline, San Francisco—have accepted leadership in a new organization—National Professional Committee for Eisenhower and Nixon. They will seek to enlist thousands of physicians, dentists, lawyers, engineers, accountants, pharmacists, and other professional men and women in an aggressive, bipartisan drive for the election of the Republican nominees for president and vice president.

The A.M.A., as a non-partisan, professional organization, is barred, both ethically and legally, from participating in election campaigns, which explains this action. A.M.A. President Louis H. Bauer said: "The Association will take no part in the presidential election, except to join with other non-partisan groups in urging all eligible voters to cast their ballots on election day, regardless of their affiliations or preferences. Individual doctors, of course, are entirely free to engage in election activities and, in fact, have a very real responsibility to make their influence felt for good government."

## "ILO" SPELLS DANGER

In the eyes of American physicians today, the three initials "ILO" spell danger!

They stand for an international body which eventually may change the whole concept of medical practice throughout the world.

ILO means International Labor Organization, an affiliated agency of the United Nations. It comprises some 60-odd active member-governments. Its policy-making body is the International Labor Conference, which meets annually, usually in Geneva where the staff maintains permanent headquarters.

The last ILO conference was held in June and since then more and more evidence is accumulating that the drive for socialized medicine has shifted from the domestic scene to the international scene.

The ILO is one of the oldest and most important of the maze of international organizations functioning today, and the American Medical Association has been watching its work for years. It now is felt that the time has come to acquaint American physicians with the facts

and let them know that, while the issue of socialized medicine is quiescent so far as the public and Congress are concerned, there is danger of having it walk through a back door under the guise of an international treaty.

Ratification of ILO's newest Convention (Treaty) on Minimum Standards of Social Security by a two-thirds vote by only the Senate would establish "socialized medicine" irrespective of the wishes of the majority of the members of Congress and the public to the contrary. The medical care section of the convention stipulates in part that a country ratifying must provide a system of compulsory health insurance. Lacking this, it has two alternatives: 1. Private, voluntary health insurance administered by public authorities under established regulation, or 2. Private, voluntary health insurance administered by insurance companies under government supervision.

The A.M.A. Journal lately has published considerable material on the ILO and its health objectives, and more articles are scheduled to appear in the very near future. This is "must" reading for every physician.

For back reading, physicians are invited to turn to the Organization Section of the Journal, May 31, 1952; to the excellent statement of A.M.A. President Louis H. Bauer on page 869 of the June 28 issue of the Journal; to Capitol Clinic Vol. 3, No. 26, July 1, 1952, and to the Washington News Section of the Journal, July 12, 1952.

Here is part of another editorial—"Socialized Medicine—the ILO Way"—which appeared in the Journal, August 23:

Although the battle against the proponents of political medicine has been won, at least temporarily, in our state legislatures and in the Congress, we are in danger of losing the war through an international approach.

The same forces which successfully attempted to socialize the medical profession through legislation are finding it much easier to work through the United Nations and the International Labor Organization. In our enthusiasm to espouse such principles as "fundamental human rights," "social progress," and "international peace and security," we have aided and abetted the activities of these forces. Through the wholesale approval of treaties, conventions, and executive agreements, our international representatives have placed not only American medicine, but our national sovereignty and or Constitution in jeopardy.

Socialism by treaty is now a greater threat than socialism by domestic legislation principally because the possibility of political and economic regimentation from an external source is not widely recognized. The public is unaware of the dangers inherent in the treaty-making power because during the first 150 years of our Republic treaties concerned only the relationship between the United States and other sovereign states. Their attempted use to define the relationship between American citizens and their own government is a recent development—a development, however, which can result in the subtle realization of the socialist's dream of cradle-to-the-grave security.

A recent covenant, entitled "Minimum Standards of Social Security," approved by the International Labor Organization in Geneva in June, 1952, envisions government benefits in nine fields of social security—medical care, sickness benefits, unemployment benefits, old age pensions, employment injury benefits, family allowances, maternity benefits, invalidity benefits, and survivors' benefits. While the medical benefits in the covenant are carefully distributed through the document, considered together they constitute "socialized medicine."

It is time, therefore, that as a nation, and as a profession, we stop and analyze the results and potentials of our international actions. It is the duty of every physician to acquaint himself with the history, the purpose, and the plans of the United Nations, and the International Labor Organization.

In addition, the American Medical Association and its component societies must wage the same vigorous campaign against socialism by treaty that it is now conducting against socialism made-in-America.

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# TOPICS OF *Current Medical* INTEREST

## RX, DX, AND DRS.

By GUILLERMO OSLER, M. D.

When a doctor tells a patient to RELAX he doesn't know what he's talking about. He can't tell the man what the word means, or how to do it. He probably needs to relax even more than the patient. . . . Dr. A. B. Gottlober of Los Angeles describes relaxation, as others have elsewhere, in the Annals of Western Medicine and Surgery. An average adult can learn how in about 3 months. Children learn more quickly. . . . One of the two main types of relaxation is the 'general', in which the patient lies down, with the eyes closed, and progressively relaxes all of the body musculature. . . . 'Differential' relaxation is the process of freeing muscles and muscle groups from tension when they are not needed to perform an act. Reading, talking, golfing, eating, etc. can be accomplished just as well or better if only the essential muscles are used, and others are kept from 'hamming-up the act'. . . . Muscle pain may follow sustained contraction in tension states. Anxiety and fatigue may result in spasms in the intestinal tract. Emotion may be an adjunct cause in hypertension. Even infertility in the female has been blamed on tubal spasm in emotionally disturbed women. Sleep should be induced by general relaxation, rather than by the chronic use of sedatives. . . . Who has 3 months to learn, tho, asks old average tense Osler?

---

**The C. D. Leake one-sentence review of publications, labelled "Galveston. A Muggy August," calls attention to a simple English therapy method. Douthwaite & Shaw report (in the British Medical Journal) that the sucking of milk-alkali-tablets will REDUCE GASTRIC ACIDITY. . . . No comment yet available from dentists on the dental effects, but we know how they grumble and tut-tut about small hard candies.**

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Medical science is Janus-like in the ALCOHOLISM problem. It faces two ways, or possibly faces itself in the mirror. . . . The similies are necessary because the two most useful drugs in alcoholism at present produce the opposite effects. . . . ANTABUSE is a 'discouragement' method which works when it can make the alcoholic fear the grandaddy of all hangovers if he drinks. MEPHANESIN (Tolserol) is the best current drug for minimizing the hangover effects of acute alcoholism. . . . Which way are we going, or are we prepared for whatever comes? Has any smart alcoholic tried No. 2 to overcome No. 1? We have seen some strange mental manoevers by men who want to avoid taking their antabuse pills, so someone has or will.

**Our western medical neighbors are swinging their shilleleghs at the California ADOPTION LAWS. . . . Babies are available. Bureaus and agencies exist in profusion. The doctor is excluded, in some states by law, from assisting parents in placing or obtaining children. Parents are heartlessly discouraged in their search for a child. Months and years may be required to the detriment of all concerned—except those commercially interested. . . . Sure sounds like a problem, Dr. Foster Good Luck.**

---

The status of SPLENIC DISORDERS has crystallized enough to be of interest and to be outlinable. Hypersplenism is the relatively new term, and it may be primary or secondary. . . . Secondary hypersplenism is a result of some non-splenic disease, and there is always a splenomegaly. A change in blood cells may result. Examples include congestive splenomegaly from cirrhosis of the liver and from acquired hemolytic anemia. . . . Primary hypersplenism may be associated with a large, small, or normal spleen, and is the result of a primarily splenic condition. Primary splenic neutropenia, idiopathic thrombocytopenic purpura, spherocytic hemolytic anemia, and primary splenic pancytopenia are all types of hypersplenism which result in specific effects on blood cells. . . . Doan and Wiseman believe that the depression of blood cells results from phagocytosis by the spleen itself. Damashek believes that the spleen produces a hormone which affects the bone marrow. . . . Splenectomy is advocated by both groups for hypersplenism. Surgeons also remove spleens for rupture, abscess, kala-azar, massive size, excessive mobility, cysts, portal hypertension, etc. . . . (This clinical exercise has been cribbed from the Gallinger Hospital Conferences, in Medical Annals of the District of Columbia).

---

**Chemists (U.S.I.) have reported that METHIONINE is valuable in the healing of BURNS. . . . It has been known that the drug could help when given by mouth, but it now appears that direct application will speed the healing process. . . . The mode is not known.**

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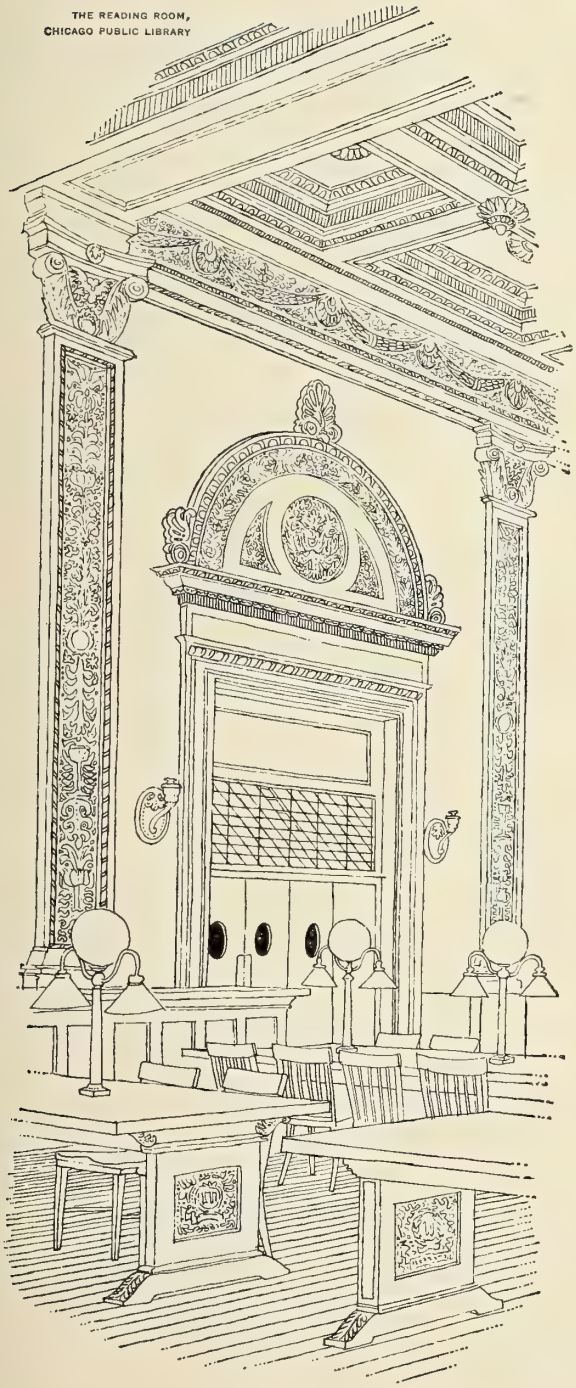
Last month a paragraph about A MYSTERIOUS DEVICE TO STOP BED-WETTING was left incomplete. It was not done to heighten the mystery, since we lean towards Sam Spade or even Perry Mason for our mysteries. . . . The answer to the advertisement for 'Enurtone' describes it as a small cabinet with a wire attachment to a pad. The pad contains a grillwork of

*New aureomycin minimal dosage for adults—four 250 mg. capsules daily, with milk.*

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Aureomycin has proved of value in a number of ocular infections in which other remedies have failed.

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*Capsules:* 50 mg.—Bottles of 25 and 100.
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*Ophthalmic:* Vials of 25 mg. with dropper; solution prepared by adding 5 cc. of distilled water.

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wires, and is placed under the pelvic area of the bed-wetter. When urine touches the pad it rings a bell in the cabinet. . . . The effect of the bell-ringing is a conditioning one. The child/person must be trained to get up when the bell rings, turn off the device, void, and even change the pad. It was first used in 1938, and there is quite a batch of references since then. . . . The salespeople claim 76-78 per cent remissions, tho others have claimed 88 to 100 per cent. . . . It is sort of 'post hoc ergo propter hoc', and not too easy to justify.

---

**The increasing need and value of TESTS FOR PROTHROMBIN have forced some of the interested parties to unscramble technic and terminology. . . . The American Heart Ass'n., various pathology societies, the U.S.P.H.S., and manufacturers of biological reagents have cooperated to suggest the following reporting of prothrombin determinations,—**

**1. Prothrombin time in seconds of both undiluted test plasm and the control.**

**2. Prothrombin activity (per cent of normal), determined by interpolation of the test results on a standardization curve.**

---

A problem in tuberculosis therapy has been the usage of PAS (para-amino-salicylate). Not the taste, or intolerance, or specific allergic reaction, but a question as to HOW MUCH SHOULD BE USED to best prevent resistance to streptomycin. . . . The British were among the first to use the drug, and have used the highest doses. Now the British Medical Research Council reports that a survey has shown that 20 grams of PAS per days "is much more effective in preventing emergence of streptomycin resistance than are doses of 10 or 5 gm. per day". . . . A comparison with 12 to 16 gm. would have satisfied us Ameddicans better.

---

**PODIATRY is a name not too well known, but it replaces the earlier term 'chiropody' and the efforts of the 'Pedic' societies. . . . All states now control the licensing of podiatry. There are now 6 accredited colleges, 2 of them with university affiliation. The course is now 4 years, with a 2-year college prep. M.D.'s head certain departments, including orthopeics. . . . Dr. Elliott Joslin, diabetes specialist of Boston, was one of the first to notice the need for trained foot care, and to arrange for such a clinic. Dr. Charles Mayo is quoted as having told the podiatrists that physicians should recognize their skill and refer patients to them when in need of foot care or comfort. The Medical Annals (D. of C.) reviews their history in a section called 'Concerning Those Who Work With Us!**

---

ANTIBIOTIC NEWS,—The news of drug effects continues to pour forth, and at present it favors 'Terramycin. (This could be partly due to very fine publicity).

1. It has been reported that IMMUNIZING injections may predispose the limb to paralysis by a subsequent polio. This does NOT hold true for penicillin injections, say Greenberg & Abramson.

2. The cramps and diarrhea from a change of intestinal flora produced by terramycin CAN be prevented by the use of Yami Yogurt. (This is also a personal test result. Not bad stuff to take, either, especially if you like cheese and buttermilk).

3. COMBINED THERAPY for pyogenic meningitis is 'the word', says H. E. Alexander of New York. To prevent resistance one uses a primarily BACTERICIDAL antibiotic (penicillin for gram-positive, streptomycin for gram-negative infections) plus a primarily BACTERIOSTATIC agent (chloramphenicol, aureomycin, or terramycin).

4. It is considered legitimate to use CHLORAMPHENICOL for the conditions in which it alone is helpful. The hazard of aplastic anemia appears to be real, tho rare. . . . Pity the poor drug company. It is being very ethical and big about the bad news, but it must be a terrible blow.

5. BRUCELLOSIS of any type is best treated (and with good results) by combined therapy. Terramycin or aureomycin, plus dihydrostreptomycin, has produced a recovery rate of 95%, say Herrel & Barber.

6. VINSENT'S INFECTION of the mouth can be very well controlled by bacitracin applied locally. . . . Troches seem the easiest and best to use. Ointment is also effective, and more so than a spray. . . . Symptoms began to clear in a few hours.

7. A typical joke among laboratory workers is that new antibiotics are not discovered but 'unearthed'.

8. ACNE VULGARIS has always had 'shotgun' treatment rather a 'magic bullet'. It required long continued shooting in the old days, and the blast often missed. . . . Andrews and colleagues reported that a gram of terramycin per day for several months was helpful. Now Barnard & Orens find that 50 to 100 mg. per days is enough to help most of a group of resistant clinical failures.

---

**Any questions concerning the 1953 meeting of the AMERICAN ASSOCIATION for THORACIC SURGERY can be sent to a friendly ear. . . . Dr. Paul Samson of Oakland, several times author for ARIZONA MEDICINE is the Secretary of the Ass'n., and he'd be delighted to tell about the meeting to be held in his back yard (San Francisco), in the 'beautiful springtime' March 27-30, 1953. It's dry inside the hotels, tho, but even that situation can be modified, it is said.**



NOT FOR PROFIT

THE HOSPITAL BENEFIT Bulletin

Special Published Bi-Monthly by the Hospital Benefit Association, First Street at Willetta, Phoenix October, 1952

## Question QUIZ
### Do you know the answers?

**Q. Why does the HBA offer individual hospitalization plans?**

A. So that persons who do not work where group plans are available may have a program for hospitalization and surgical protection.

**Q. Why are group plans less restrictive than individual plans?**

A. Because the wide diversification of group membership takes care of individuals needing immediate treatment.

**Q. Must all members of a family belong to the HBA to get family benefits?**

A. Yes.

**Q. How does the Association pay fees?**

A. Payment is made directly to the doctor upon receipt of the HBA bill form—unless the patient has already paid the bill.

**Q. May an HBA member go to the doctor of his choice?**

A. Yes. HBA members may go to any physician (M.D.) anywhere in the world.




**"This is going to hurt a little. I can't pay your bill . . ."**

# All Group & Individual Plans Differ on Important Points

Differences between group and individual hospitalization plans sometimes cause confusion and misunderstandings between patients and doctors. The Hospital Benefit Association, which offers both group and individual plans, has no argument to offer favoring one plan over the other. But the Association does suggest that doctors understand, in a general way, some of the following points.

### Group Plan Based On Law Of Averages

The natural diversification of any group establishes mathematical averages and eliminates the screening necessary when individuals apply for protection. For example, if 1,000 members of an organization belong to a group plan, the law of averages will take care of pre-existing conditions and of individuals needing immediate treatment.

Because of this wide diversification, group plans generally are less restrictive than individual plans. Group plans usually have fewer exceptions, fewer waiting periods, and shorter terms for maternity benefits. And group plans normally cover pre-existing conditions not included in individual plans.

This same idea is true, on a smaller scale, with family plans. As a general rule, all members of a family must belong to a hospitalization plan in order to receive family benefits such as maternity allowances. And only in unusual cases is a single member of a family enrolled.

No hospitalization organization can afford to cover pre-existing conditions under individual plans. It would be nice, of course, if a patient could join a hospitalization plan for only one month and get an operation for $2. But this would be like a doctor trying to get fire insurance **after** his garage burned down.

### HBA Individual Plan Liberal

Realizing that many Arizonans are not eligible for group plans, the HBA individual plan offers more protection for less money than any other in Arizona. The Association limits waiting periods to only four illnesses for males —five for females.

If at any time, any doctor has any questions regarding a patient's HBA coverage, he should call the Association's Home Office, AL 8-4888, for specific information. The Association is always happy to answer questions regarding the protection of individual and group plan members.

## Unjust Criticism Aids Socialized Medicine

**Some doctors unknowingly help the cause of socialized medicine when they unjustly criticize hospitalization plans for failing to cover pre-existing conditions. Such criticism, without knowledge of the circumstances, only hurts the doctor. It may make the patient needlessly unhappy and thus more susceptible to the propaganda of the advocates of socialized medicine.**

## *HONESTY PAYS!*

If applications are filled out properly, every HBA member is told exactly where he stands and what conditions are covered **before** the membership becomes effective. This helps to eliminate misunderstandings.

People who are unhappy with their hospitalization plans generally are those who have "larceny in their hearts." They deliberately withhold information in the hope of getting benefits to which they not not entitled.

# Woman's AUXILIARY

## THOUGHTS FOR THE FUTURE*

Ernest B. Howard, M.D.
Assistant Secretary, American Medical Assn.

. . . Looking ahead through the rest of 1952, it is obvious what the major contribution of the Auxiliary member should be. It is the same contribution asked of all good citizens in a crucial election year. I urge you, first, to make sure that every voting member of your family is registered. Then, make sure that they vote. Do not stop with your own family. Talk to your neighbors and to your associates in churches and organizations. Urge them to register and vote. Offer the use of your family car to take people to the polls on election day. If needed, offer your services as a poll watcher to assure honest elections in your ward.

As you work to get out the vote, work also to defeat the creeping socialism which is threatening America. You have powerful arguments at your command in discussing the issue of socialized medicine. Materials pointing out the dangers of compulsory health insurance still are available in quantity from your state medical society office or from the American Medical Association.

This issue is far from dead. In the February issue of The Federationist, official publication of the A. F. of L., President William Green had a long article favoring compulsory health insurance and urging his union members to support it. He wrote, "Most of the attacks you hear on national health insurance or a broad health program for our country more than likely have been instigated by the American Medical Association lobby, which has levied compulsory dues of $25 on each member to pay for such attacks. . . . At every step we must answer, and answer with facts, the propaganda spread by those (the physicians) trying to stop progress."

Fortunately, the American people as a whole are overwhelmingly with us, not because of "propaganda," but because they have a thorough understanding of the freedom which has made our country great. They understand that true progress comes from the encouragement of individual responsibility and achievement, not from the creation of a slave state.

. . . It is my hope that every Auxiliary will become increasingly active in improving the health of its community. Wherever the need may lie, whether it be an improved school health program, a new hospital, or the recruitment of girls for the local nursing school, the Auxiliary and the medical society should take the lead.

You note that I say "the Auxiliary *and* the local medical society." It is very important that you work as a team. Experience has taught that the Auxiliary which adopts projects without the approval of the medical society sometimes runs into trouble. I strongly suggest that you seek the society's assistance in planning your program. Two heads are better than one, and very often such consultation stimulates the medical society to adopt a more active public service program itself.

I might add another word of advice. It is this: Limit your Auxiliary activities to projects in the field of health. Many worthy causes will seek the aid of your group. Improvements can be made in almost every aspect of community life. Your organization, however, is a medical auxiliary, and it is in the field of health and medical care that you and your physician-husbands will be held accountable. There is much to be done in this field. Better, then, to mend our own fences, and to build strong new ones, than to assume other problems. This must not be interpreted to mean that, as individuals, you should not be active in other organizations. On the contrary, it is vitally important that physicians and their wives be working citizens of their community. The above advice applies only to projects adopted officially by your Auxiliary.

The medical profession is one of the staunchest supporters of individual liberty. It follows that we must also be the first to accept individual responsibility. It is our clear responsibility to do a good job in providing medical and health services for the American people.

As Auxiliary members, ask yourselves these questions about your community: Do our citizens know the basic rules for maintaining good health? If not, how can we help to educate them? Does our community have enough modern hospital beds? If not, how can we obtain them? Do our schools have a good health pro-

*Reprint from the BULLETIN of the WOMAN'S AUXILIARY.

gram for the children? How can we make it better? Is our community responding as it should to appeals for blood? If not, how can our Auxiliary encourage an increased number of donors? The questions could go on and on. Why not take inventory of your community's health and then adopt projects to fill unmet needs?

Socialists always ignore the many positive achievements of our way of life. They put the emphasis on the inequalities, the failures. The fewer chinks we have in our armor, the harder it will be for them to hit home with their propaganda that "only the federal government can do the job successfully." I challenge you, as Auxiliary members, to busy yourselves filling the chinks. To put it positively, I challenge you to do all you can to better America's already outstanding health record, to the end that your children and mine will not only be healthy, but will also be free.

WHAT – ME VOTE?

They have such refined and delicate palates
That they can discover no one worthy of their ballots
And then when someone terrible gets elected
They say—"There, that's what I expected!"

*Ogden Nash*

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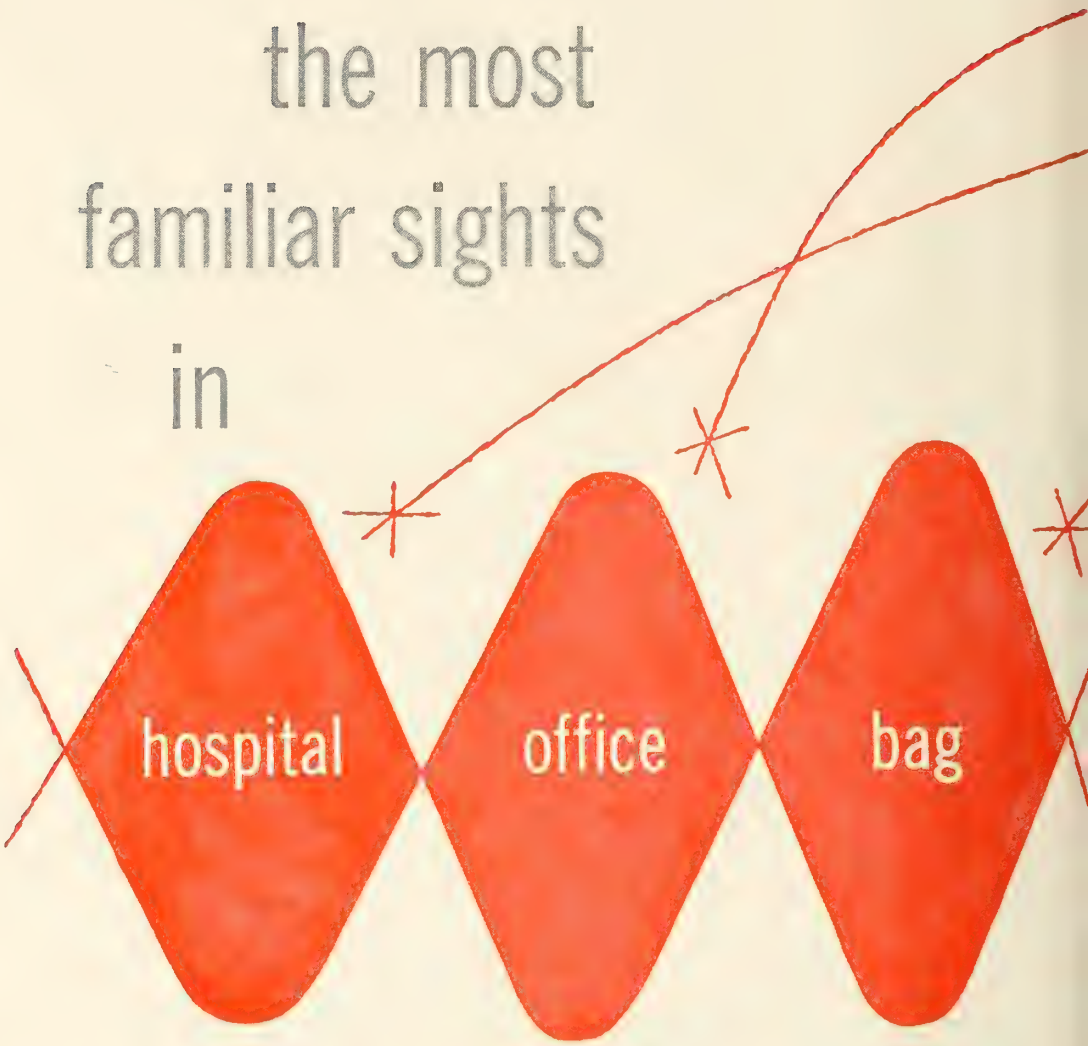



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Protein of good quality and in adequate amounts is the most effective dietary agent for protecting the liver from damage and for promoting its repair.[2] In the long-term management of chronic liver disease, a suggested diet includes at least 4 ounces of lean lamb, veal, or beef in both the noon and evening meals.[3]

Among the nutritional needs of patients with chronic ulcerative colitis is protein.[4] For such patients a recommended diet includes 4 ounces of tender meat with luncheon and with dinner.[5a]

In diabetes mellitus, maintenance of protein reserves is important for supporting well-being and vigor, for maintaining resistance to infection, and, in conjunction with good general management, for minimizing many of the degenerative changes commonly seen in this condition.[6,7] One ounce of bacon at breakfast and 2½ ounces of cooked meat at each of the other two meals are valuable in a diabetic diet.[5b]

A program of treatment[8] found useful in atherosclerosis of the coronary vessels includes an adequate diet low in fat (20-25 Gm. daily) and normal or moderately high in protein (60-100 Gm. daily), in conjunction with lipotropic agents. A sample menu of this diet lists 2 ounces of lean meat at both the noon and evening meals.

Underweight or average weight patients with persistent low blood sugar levels are benefited by a high protein diet providing meat two or three times a day.[9] In overweight patients of this type, lean meat is served at luncheon and at dinner.

During convalescence from infectious disease, the importance of "high protein-high calorie" diets including generous servings of meat deserves emphasis.[10] For this purpose, a suggested typical daily menu schedule which results in weight gain, improved vigor, and a restored sense of well-being furnishes ½ ounce of bacon at breakfast and 3 ounces of meat at each of the other meals. Supplementary feedings may include additional amounts of meat.

1. Lewis, H. B.: Proteins in Nutrition, in Handbook of Nutrition, American Medical Association, ed. 2, Philadelphia, The Blakiston Company, 1951, p. 1.
2. Patek, A. J., Jr.: Evaluation of Dietary Factors in Treatment of Laennec's Cirrhosis of Liver, J. Mt. Sinai Hosp. *14:*1 (May-June) 1947.
3. Portis, S. A., and Weinberg, S.: Recent Advances in the Medical Treatment of Cirrhosis of the Liver, J.A.M.A. *149:*1265 (Aug. 2) 1952.
4. Welch, C. S.; Adams, M., and Wakefield, E. G.: Metabolic Studies on Chronic Ulcerative Colitis, J. Clin. Investigation *16:*161 (Jan.) 1937.
5. (a) Mayo Clinic Diet Manual, Philadelphia, W. B. Saunders Company, 1949, p. 89.
   (b) Ibid., p. 133.
6. Mosenthal, H. O.: Management of Diabetes Mellitus, An Analysis of Present-Day Methods of Treatment, Ann. Int. Med. *29:*79 (July) 1948.
7. McLester, J. S.: Nutrition and Diet in Health and Disease, ed. 5, Philadelphia, W. B. Saunders Company, 1949, p. 364.
8. Morrison, L. M.: Arteriosclerosis: Recent Advances in the Dietary and Medical Treatment, J.A.M.A. *145:*1232 (Apr. 21) 1951.
9. Low Blood Sugar Level; Queries and Minor Notes, J.A.M.A. *149:*1358 (Aug. 2) 1952.
10. Goodman, J. I., and Garvin, R. O.: Results of High Calorie Feeding, Gastroenterology *6:*537 (June) 1946.

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# ARIZONA MEDICINE

*Journal of* ARIZONA MEDICAL ASSOCIATION

VOL. 9, NO. 11 NOVEMBER, 1952


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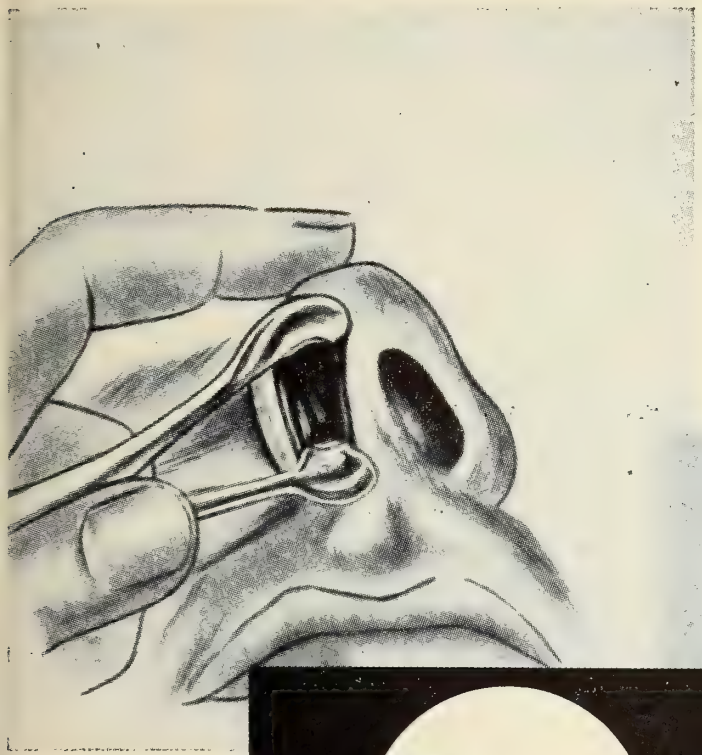
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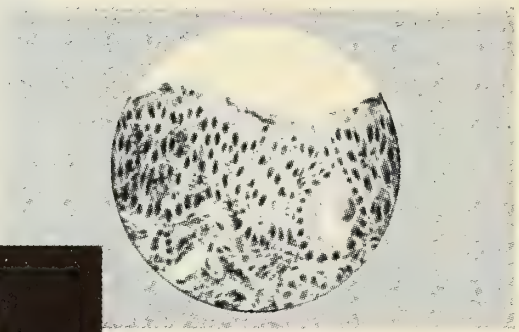
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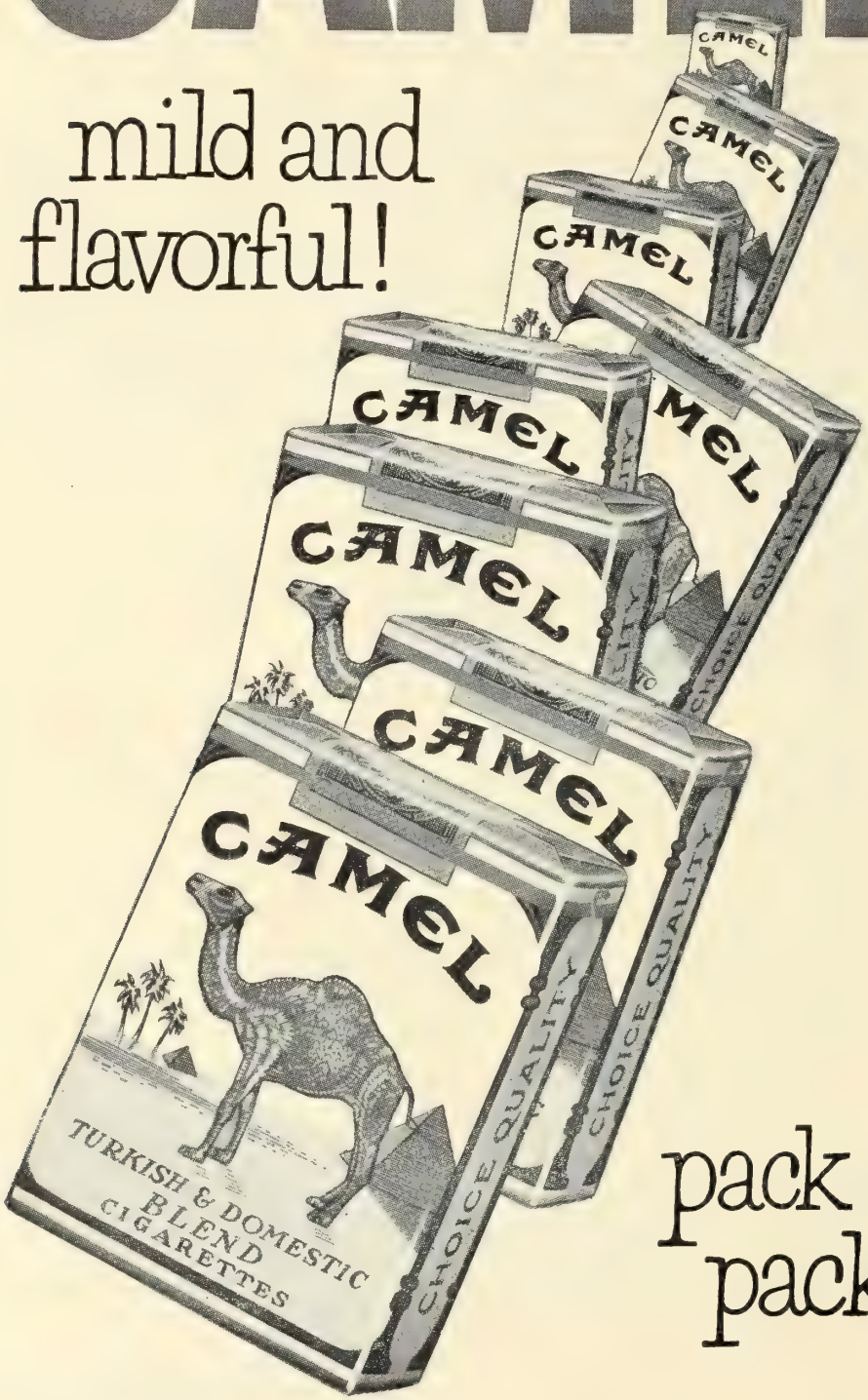
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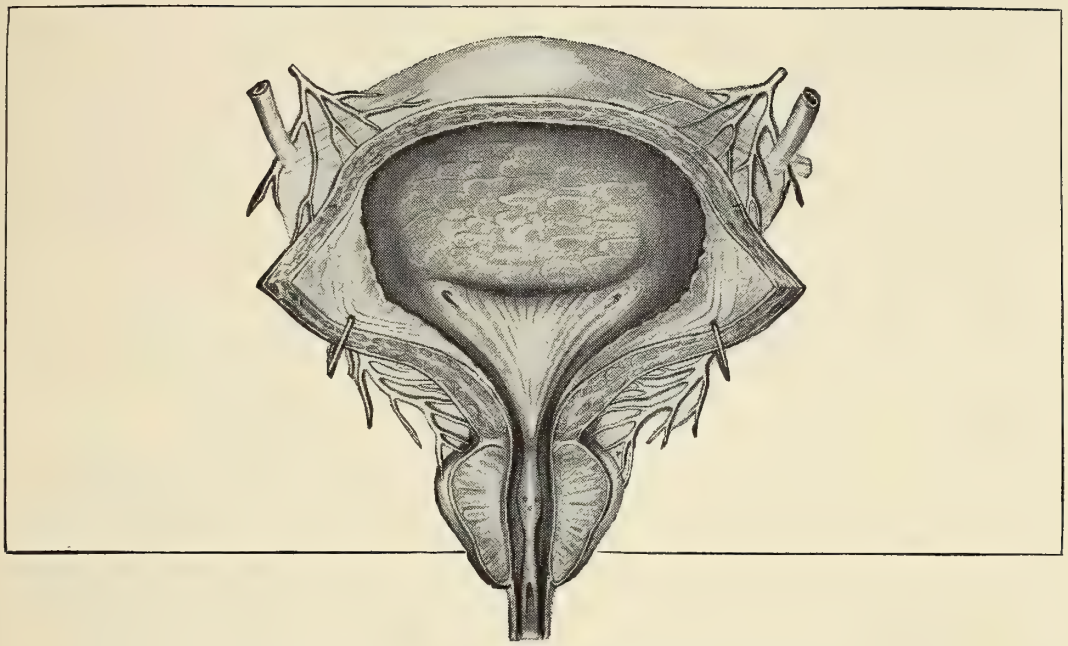
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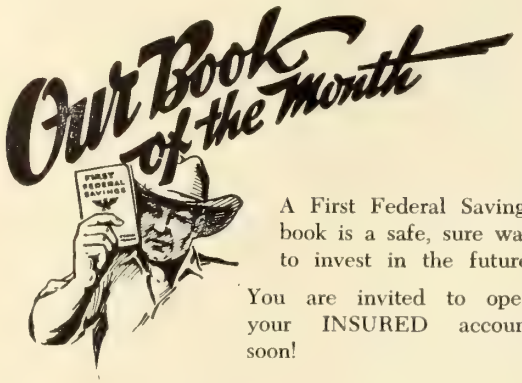
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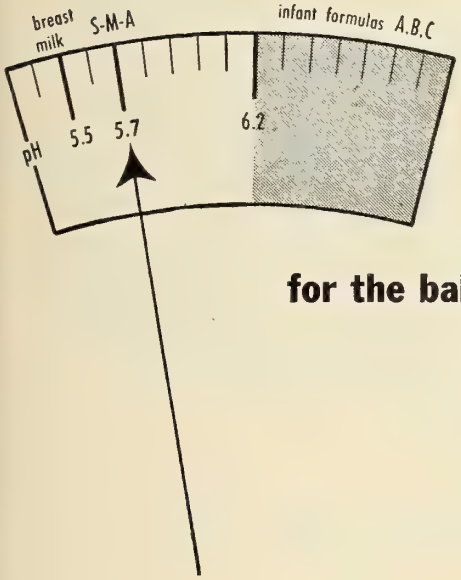
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REFERENCES

1. Barbero, G.J., Runge, G., Fischer, D., Crawford, M.N., Torres, F. E., and Gyorgy, P.: J. Pediat. *40*:152 (Feb.) 1952.
2. Lichtman, H., Ginsberg, V., and Watson, J.: Proc. Soc. Exp. Biol. and Med. *74*:884 (Aug.) 1950.
3. Torres, F.E., Romans, I.B., and Wheller, J.B.: A Study of Infantile Diaper Rash. To be published.

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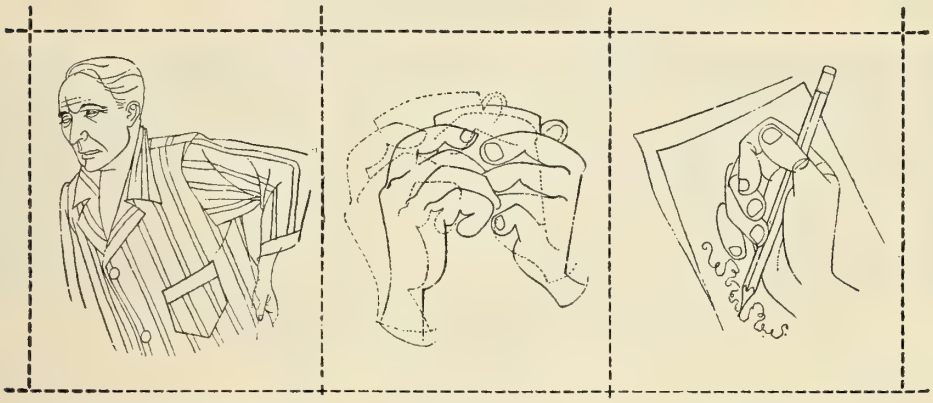
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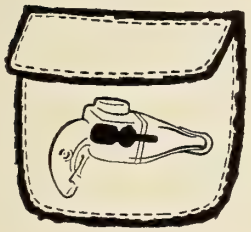

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1. Kaufman, R., and Farmer, L. (1951), Norisodrine by Aerohalor in Asthma, Ann. Allergy, 9:89, January-February.
2. Swartz, H. (1950), Norisodrine Sulphate (25 Per Cent) Dust Inhalation in Severe Asthma, Ann. Allergy, 8:488, July-August.
3. Krasno, L., Grossman, M., and Ivy, A. (1949), The Inhalation of 1-(3',4'-Dihydroxyphenyl)-2-Isopropylaminoethanol (Norisodrine Sulfate Dust), J. Allergy, 20:111, March.

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# Original ARTICLES

## CARCINOMA OF THE PANCREAS

E. Payne Palmer, M. D., F.A.C.S.
Phoenix, Arizona

Carcinoma Of The Pancreas is a disease that is too frequently overlooked. The most important thing that the clinician can do is to keep carcinoma of the pancreas in mind when examining the upper abdomen. Malignant tumors of the pancreas are practically always carcinoma. Among carcinoma in general, that of the pancreas is not infrequent, forming from 1.5 to 2 percent of all carcinomas. The tumor is ordinarily of the scirrhous type, but there also occurs the medullary, which is larger and softer. The growth may arise either from the cylindrical cells lining the ducts or from the cells of the accini. Rarely myxomatous degeneration has been found, resulting in a very soft tumor.

Most often an early diagnosis must be made by a consideration of the physical and psychological symptoms. In every case a history of mild digestive distress extends over an appreciable period of time prior to the inaugural symptoms. An impaired appetite is, as one would expect, a common complaint. Weight loss is almost invariably present and is notable for its degree and rapidity.

Pain is described by about three out of four patients. It occurs more often when the body or tail is involved. It most often is situated in the upper abdomen and frequently radiates into the back. It is characteristic for pain to be exaggerated at night, or when the patient is recumbent; frequently the patient sits or stands in a stooped position.

Pain is quite often severe and persistent. It is dull, pressing, burning, aching or boring and is unrelated to the digestive cycle. When one finds an epigastric pain for which the patient takes aspirin, one should think very carefully about carcinoma of the pancreas.

The resulting jaundice is relatively painless, is of gradual onset, but once established does not yield, rather deepens steadily. In exceptional cases, it may set up suddenly. It usually appears within a few weeks or months from the date of the onset of symptoms. In the presence of jaundice, a distended gallbladder which is palpable through the abdominal wall is indicative that the obstructive jaundice is due to carcinoma of the head of the pancreas. The distension of the gallbladder was long ago observed by Courvoisier to be so common that he felt justified in formulating his well known law, the substance of which is that in the presence of chronic jaundice, if the gallbladder is distended, the cause of the obstruction is a tumor either in the common duct or in the pancreatic head, whereas in case of obstruction of the common duct by stone, the gallbladder will usually be found contracted. It is now generally accepted that Courvoisiers law holds good in about eighty percent of the cases.

Anemia is generally only mild in degree in carcinoma of the pancreas. Some patients with carcinoma of the pancreas present an interesting group of mental symptoms consisting principally of anxiety, obstinate insomnia, crying spells, and an overwhelming fear of impending disaster. Multiple venous thrombosis appear to occur more often in carcinoma of the pancreas than in carcinoma of other organs. Diarrhea has been

Read before the 61st Annual Meeting of the Arizona Medical Association, Phoenix, May 1, 1952.

noted as a frequent symptom, but is often preceded by a period of constipation. Some patients are plagued by a frequent but fruitless desire to go to stool. The stools, as a rule, contain no bile, but the urine is deeply bile stained. Exclusion of bile from the duodenum may be demonstrated by the examination of the duodenal contents. In the more advanced stages of the disease, blood may be noted in the stool or in the gastric contents, particularly if ulceration into the stomach or bowel has occurred. Edema of the legs may come on owing to obstruction of the inferior vena cova, to cardiac weakness or even to pure inanition; and ascites is found in a few cases where the portal vein becomes obstructed. The internal secretion is not usually interfered with, inasmuch as there is nearly always a sufficient portion of the pancreas left uninvolved by the disease to carry on sugar metabolism. Nevertheless, the carbohydrate metabolism of the patient should be checked. Marble has called attention to the rather high incidence of carcinoma of the pancreas in diabetes. The disease affects older people predominantly and is four times more common in males than in females.

A palpable tumor can be felt in about one-third of the cases. The tumor grows commonly forward above the lesser curvature of the stomach, as well as through the pancreas itself. On account of transmitted pulsation from the underlying aorta, aneurism may be suspected. Expansile pulsation, however, is absent and the differential diagnosis is not often difficult. Enlargement of the liver is a common finding when jaundice is present. It is due to retained bile and not to metastasis. Metastasis appears early and involves the neighboring lymph nodes and the liver, but it is also common for it to spread by contiguity through the peritoneal cavity and into neighboring organs. The patient frequently dies before the metastatic growth reaches any appreciable size, so that at operation the liver may seem to be free though in reality is studded with small deposits. When the tumor is situated in the head, the chief difficulty lies in the differentiation from chronic pancreatitis. Pain is common to both, but in the case of chronic pancreatitis, a careful history will often elicit the symptoms of an acute or subacute attack, suggestive of pancreatitis, while in the case of carcinoma such a history is rare. Jaundice is common to both, but is apt to be deeper in the case of carcinoma of the pancreas. In chronic pacreatitis there is a frequent coincidence of gall stones, and there may have been a history of gall stone attacks, or of a previous intermittent jaundice, suggesting gall stones. On the other hand, in carcinoma of the pancreas the jaundice is nearly always progressive and persistent without remission, and stones are rarely found. For this reason also, if stones are present in coincidence with chronic pancreatitis, the gall bladder will not usually be dilated, although indeed that is still possible.

One of the most valuable means of recognizing carcinoma of the pancreas is roentgenological examination of the upper gastrointestinal tract by means of the barium meal. The x-ray changes which may be observed depend upon encroachment by the carcinoma of the pancreas usually on the stomach and duodenum. This means that the study is apt to be negative during the very early stage when the diagnosis is most important, for then the carcinoma has not yet attained sufficient size to produce compression or infiltrative changes in the adjacent viscera. It is likewise true that the roentgenotogic alterations are not pathognomic of carcinoma of the pancreas. Nevertheless, almost half of the patients examined roentgenologically at the Graduate Hospital and at the University of Chicago, presented signs suspicious of a tumor in and about the head of the pancreas. A widening of the duodenal arch, a slowing of the duodenal flow, and a defect in any part of the duodenum have been pointed out by roentgenologists as indicative of a tumor of the head of the pancreas. X-ray examinations may be helpful by suggesting the presence of a tumor by such findings, as enlargement of the duodenal loop, indentation of the gastric or duodenal wall or the actual duodenal obstruction and mucosal irregularity. In a few cases, actual obstruction of the gut, usually the second portion of the duodenum, is caused by pressure of the growth.

Carcinoma of the pancreas is a rapidly fatal disease. Counting from the onset of symptoms, the duration of life has been estimated by various authors as from four to seven months; but there are instances on record of prolongation of life through operation up to four years, so that operation to relieve itching and jaundice by a short circuiting is always justifiable.

Because of the difficulties in establishing a

diagnosis, the discovery of an operable carcinoma of the head of the pancreas is a rare accident, and consequently surgical treatment of this condition is essentially palliative. Exploration is justifiable and should be urged for two reasons. There is always the case in which the obstruction is due to a chronic pancreatitis and on opening the abdomen the pancreas will usually be firm to palpation and enlarged throughout; it is frequently impossible for the surgeon to say whether the mass that he feels is inflammatory or carcinomatous, unless obvious metastases are present in the lymph nodes along the upper border of the pancreas and the liver. Resection of the duodenum and head of the pancreas for carcinoma as done by Whipple, Parsons, and Mullins had better be done by these men who perform the operation occasionally, rather than by the surgeon who operates such cases once or twice during his career.

## CONCLUSION

Carcinoma of the pancreas is not infrequent. It begins with a mild digestive distress extending over an appreciable period and commonly develops with severe pain accompanied by painless jaundice. According to the laws of Courvoisier, the gallbladder is distended and a tumor is indicated in eighty percent of all cases. The tumor grows commonly forward above the lesser curvature of the stomach. It is frequently mistaken for chronic pancrititus. Roentgenological examination is one of the most valuable means of recognizing carcinoma of the pancreas.

Carcinoma of the pancreas is a rapidly fatal disease. The duration of life has been estimated by various authorities as from four to seven months. The surgical treatment of this condition is essentially palliative. The technical difficulties and the danger of a radical operation are obviously very great.

# THE DETECTION AND CORRECTION OF HEARING LOSS IN THE YOUNGER CHILD

John S. Mikell, M.D.
Tucson, Arizona

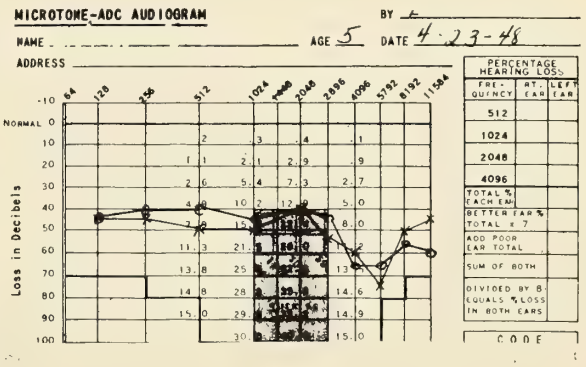
This paper is being presented so that physicians may better appreciate the magnitude of the problem of a hearing loss in the younger child.

The detection of a hearing difficulty in the younger child depends upon us, who are responsible for the child's welfare, and ultimately for its physical and mental development throughout life. An unaided hearing loss will cause a delayed development in children with a normal mental capacity and may likely result in progressive mental degeneration. The earlier a hearing loss can be detected the better the opportunity of preventing such a calamity.

A mother brought her five-year old daughter into the office and made this statement, "I almost hate this child! She has been expelled from three nursery schools. She is disobedient, belligerent, irresponsible, untidy, resentful, and throws tantrum after tantrum."

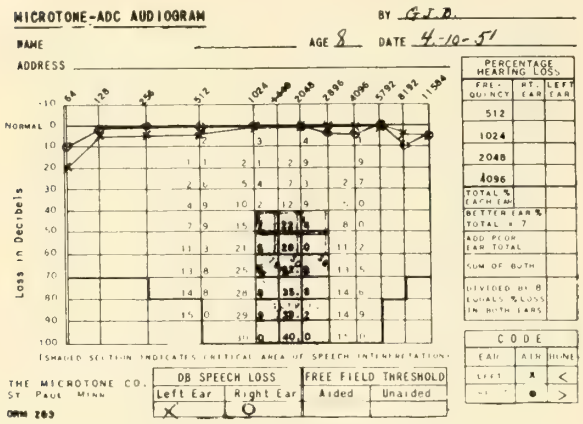
On a routine ear, nose, and throat examination, including an audiometric study and the use of the nasopharyngoscope, it was found that this child had a marked hearing loss. This, I felt, was due to infected hyperplastic lymphoid tissue encroaching upon the eustachian tube orifices. This tissue receded following the application of radium to the nasopharynx, and the child's hearing was restored to normal. All of the behavior problems resulting from the personality changes were corrected, and the youngster was restored to a happy, healthy, normal childhood—she just simply blossomed out. One of the most gratifying features of this case was the dramatic change in the mother-child relationship.

Audiograms of this child parallel her mental and physical development. The first audiogram, at the age of five years, when she presented a severe behavior problem, showed a 40% hearing loss.




Read before the Arizona Medical Association at its meeting in Tucson in April, 1951.

Another audiogram, taken three years following irradiation to the nasopharynx, shows that her hearing had been restored to normal. All abnormal personality traits had vanished.




The Digest of Neurology and Psychiatry estimates that there are 3,000,000 American children with hearing loss due to middle-ear defects, which may lead to varying degrees of deafness in later life. There are also many other children who are handicapped by a hearing loss caused by other than middle-ear disease.

There are several causes of a hearing loss in the younger child. The first is the result of eighth nerve damage. This may be from birth injury, malformation, or from the mother having suffered a virus infection at from six weeks to three months of pregnancy. A very high percentage of children born of mothers following such an infection (especially Rubella) are born either deaf or blind. Some authorities place this percentage as high as 70%. Immunization, when possible, of all pregnant women who have been exposed to any such infection in the first trimester might modify the severity of the disease, thereby reducing the number of children having a congenital type of deafness.

Immunization should also be considered in all pre-school children who have been exposed to virus infections so that the severity of the infection may be modified. A severe virus infection may cause an irreversible nerve deafness which would result in the cessation of word formation following apparently normal speech development.

Second, there is the conductive type of hearing loss. This type of deafness is caused by middle-ear disease usually resulting from malfunction of the eustachian tubes. Much can be done toward correcting this type of hearing loss.

There is also a mixed type, which is both nerve and conductive in nature. When the conductive type is superimposed upon the nerve type of deafness, it is important to eliminate the causes of the conductive type, which will raise the hearing to the level of the loss resulting from the nerve damage.

One should suspect a hearing loss in a child if there is a lack of response, excessive shyness, belligerence, defiance, or unnatural speech. You should inquire if the child is backward in its training. Those children showing any of these changes, in the presence of a non-symptomatic serous type of otitis media, allergic rhinitis, sinusitis, or hypertrophied tonsils or adenoids, should be sent for an otological examination. All children with repeated attacks of otitis media should be suspected of having a hearing loss.

The routine tests in the general practitioner's office are quite simple. A watch can be used. The physician's voice can be varied in volume and pitch while talking with the child and the child's expression watched closely to determine if conversation is being registered. Better still is the use of tuning forks. If there is any indication whatsoever that the child's hearing is impaired, this child should be referred to an otologist. The Society for Crippled Children has a nationwide program for testing all younger children in the schools. Many state universities, including the University of Arizona, have established courses in hearing and speech defects. When one of these organizations sends a child to you with a suspected hearing loss and you cannot determine the exact amount of hearing acuity, an otologist should be consulted.

The otologist has many methods of determining a hearing loss in the pre-school child. These tests involve the use of whistles, bells, and various other types of sound-producing instruments. The standard audiometer is of course used. This cannot be accurate in the majority of children under five years of age due to the fact that the test depends upon the child's voluntary response.

However, there has been developed by Doctors Hardy and Bordley at the Johns Hopkins Hospital Hearing and Speech Center a method of determining the exact hearing acuity of these younger children. This test involves the use of the sympathetic nervous system and is in no

way dependent upon the child's voluntary response. The reactions are involuntary and uncontrollable by the child.

Electrodes are attached to one hand so that a mild irritating shock can be given to the patient. Earphones which are connected to a pure tone audiometer are attached to either ear. An audiometer is an instrument which is calibrated to show the intensity and frequency of the various pure tones.

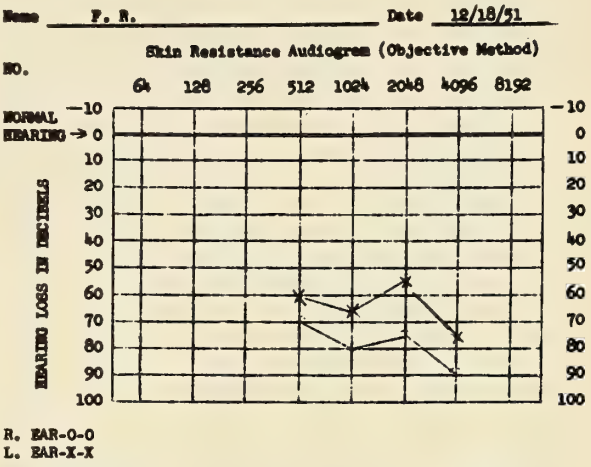
Another set of electrodes is attached to the other hand and connected with the recording device. The intensity of any definite sound is increased until it is shown by the detecting device that the patient has heard the sound. He is allowed to hear this sound again, and after a three-second interval is given a mild irritating electrical shock. This tone-shock procedure is repeated until the child associates the sound with the shock.

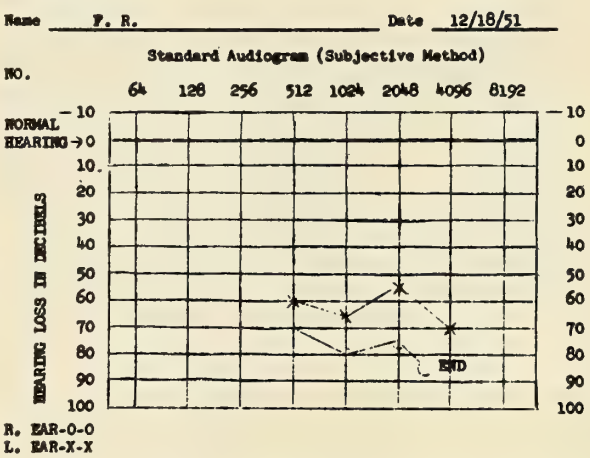
After the child has been thus conditioned, the sound is delivered but the shock is not administered. The anticipation or expectation of the shock causes changes in the sweat glands. These changes are picked up through the skin resistance electrodes, amplified, and recorded through a group of instruments, shown in cut No. 3. The lowest intensity of sound that causes the change in the skin resistance, as recorded through these instruments, determines the child's hearing acuity.



The accuracy of this objective type of audiometry is illustrated by the following audiograms, which were made by Professor Harry Stewart, Associate Professor of Electrical Engineering at the University of Arizona, Don Peterson, Senior student in Electrical Engineering, John S. Mikell, M.D., and Garnett J. Burns, R.N.

-9-



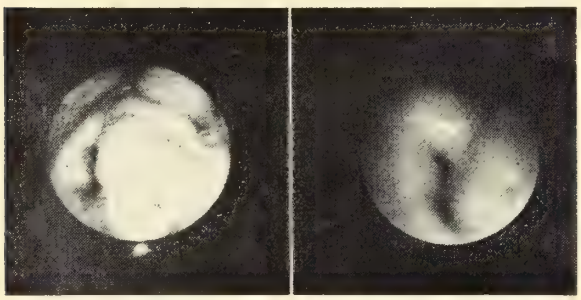




This method of testing is valuable in determining if a child should be admitted to the State School for the Deaf, or for the Mentally Defective. Many children with normal mentality have developed into human vegetables because of lack of detection and correction of such hearing loss. It has been shown that a child having as little as 20% hearing acuity may be given the proper hearing aid, and with specialized training can lead a normal life. It is advisable to put such an aid on children as soon as the defect is noted, even three years of age or younger. This is done so that the child can be taught at an early age and thus be given the opportunity to develop normally. Instruction in lip-reading should be given in conjunction with the hearing aid.

If there is a total hearing loss, the child should be sent to an institution caring for such children or receive competent supervised home

training, as offered by the Tracy Clinic in Los Angeles. I want to emphasize that a child should never be considered as "born deaf" until proven so, and that no child should EVER be admitted to a school for deaf or mentally defective without a thorough and exhaustive examination by a competent otologist.

I wish to again stress the importance of the early detection of the insidious type of progressive hearing loss. If the hearing loss is the result of malfunction of the eustachian tube (conductive type) much can be done. The tonsils and adenoids should be removed as the first procedure. Any existing allergic condition should be given the strictest attention. Sinusitis, if present, should be treated vigorously. The use of radium to the nasopharynx has given dramatic results.

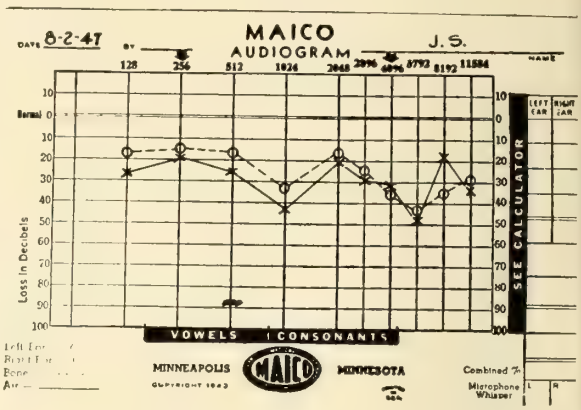


This cut is a reproduction of photographs taken through a nasopharyngoscope. The picture on the right demonstrates a normal eustachian tube orifice. The one on the left shows hyperplastic lymphoid tissue encroaching upon the eustachian tube orifice. The application of small amounts of radium causes recession of this tissue, which permits normal function of the eustachian tube and proper ventilation of the middle ear. The results obtained following irradiation are quite spectacular, as shown by the following cases selected from my files.

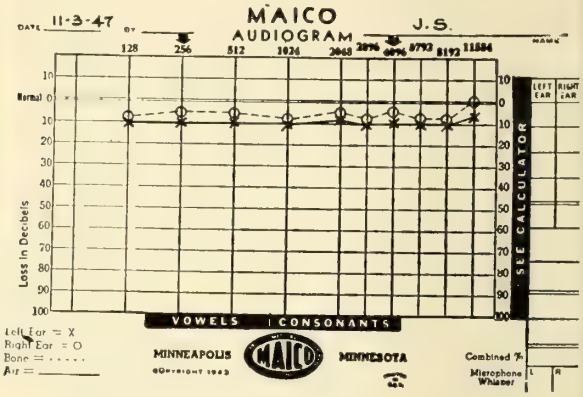
My most immediate interest lies in the welfare of the children of Arizona. A comparative study was made to convincingly demonstrate to the medical profession the importance of proper observation, examination, and care of school children. This comparison was made between a group of privileged children, who had had adequate medical care, and a group of underprivileged children who had not received adequate medical observation. This study revealed the following facts:

Among the privileged school children, there were 29 representing an average class of eight-year old students. There were no borderline cases, nor were there any handicapped by a hearing loss.

BEFORE IRRADIATION




AFTER IRRADIATION



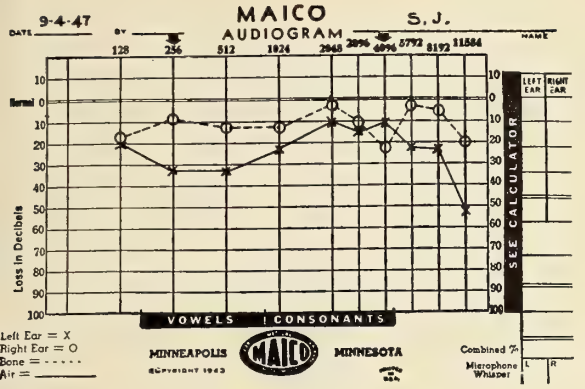

In a similar group from the underprivileged class, who for various reasons had not received adequate medical care, 34.5% were borderline cases and 28.6% were definitely handicapped by a hearing loss.

Examination of the children in the Arizona Children's Home showed 12.4% were borderline cases and 41.6% had a hearing loss which would definitely retard normal development.

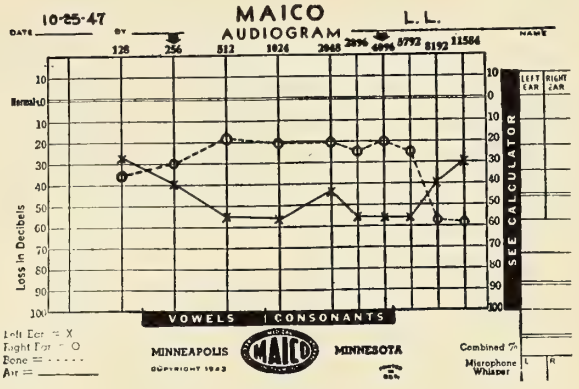
A personal survey of the hearing acuity of the boys at the Fort Grant School for Juvenile Delinquents revealed that 21.2% of these boys were also handicapped by a hearing loss. Is it not shocking to realize that 10 (21%) of 47 boys committed to this institution have a physical handicap which may have caused personality changes responsible for their misconduct?

In a group of 44 underprivileged school children repeating grades 4 (9.3%) were borderline

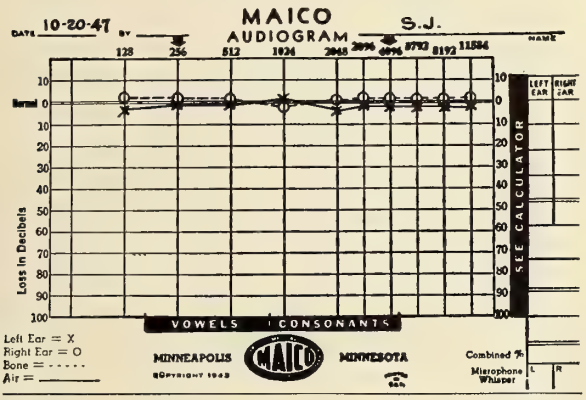
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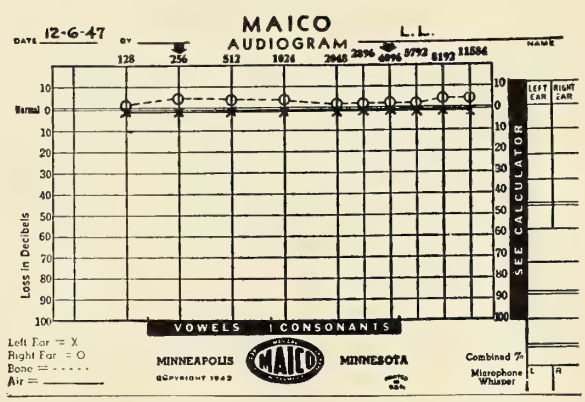

BEFORE IRRADIATION




AFTER IRRADIATION




AFTER IRRADIATION




and 13 (30%) were handicapped by a hearing loss. The average cost of a child repeating a grade in the Tucson Elementary Schools is $248.00. This means a total cost of $3,224.00 to taxpayers for children repeating grades in only two schools in Pima County.

Many of the cases listed as borderline will likely become definitely handicapped. Early detection and correction of borderline cases will prevent this from occurring.

In conclusion, may I once again stress the importance of the detection of a hearing loss at an early age. A specialized educational program is available for children with a nerve or congenital type of deafness. Special legislation should be put into effect to require a thorough otological study before a child can be admitted to an institution for the deaf or mentally defective. An accurate method of determining the hearing acuity in the younger child has been perfected and is in operation in this community.

All contributing factors in the conductive type of hearing loss should be eliminated in an effort to raise the hearing to the highest possible level. If improvement cannot be obtained, removal of these contributing factors will tend to retard the progressive deafness. The correction of a hearing loss in a young child will also correct disastrous personality changes before they become irreversible. Children with normal mental capacity must not be allowed to degenerate because of undetected and unaided hearing loss.

# THE THERAPY OF CARCINOMA OF THE THYROID GLAND

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Phoenix, Arizona

## INTRODUCTION

This paper does not represent any new or original clinical or laboratory research, but rather represents a brief summary of the proper manner of treating carcinoma of the thyroid gland. A considerable amount of this data represents the methods in use today in leading medical centers treating this disease. For illustrative purposes several graphs have been used from articles written by other men with due credit being given to them.

No mention is being made of the various methods used in the diagnosis of carcinoma of the thyroid gland, either clinically or with laboratory aid. The diagnosis may be unsuspected, suspected or proved as the case under illustration may point out. A very few words concerning the pathology of carcinoma of the thyroid gland are absolutely necessary. No special mention will be made of the pathology of the thyroid gland. References will be made to various forms of carcinoma of the thyroid which may exist however, and to transitions from one form to another which may take place. Methods of causing transitions from one form of carcinoma of the thyroid to another form will also be mentioned.

At the risk of a gross over simplification, but nevertheless for the sake of brevity and clarity, the only special mention that will be made regarding the pathology of carcinoma of the thyroid gland is this: the degree of uptake of radioactive iodine in either a primary or metastatic site is directly proportional to the amount of differentiation which that carcinoma may show. This is to say, the greater the degree of alveolar or follicular formation with resultant colloid deposition, the greater the uptake and storage of radioactive iodine. Primary or metastatic growths which are undifferentiated, that is papillary, solid, etc., do not contain colloid and hence do not concentrate radioactive iodine.(1)

Carcinoma of the thyroid, although spoken of under one heading, cancer, may represent itself and follow a certain clinical course in one age group and in one histo-pathological form of the disease. This type at times may only distantly resemble the course taken by carcinoma of the thyroid in another age group or histopathological form. The same pathological forms of carcinoma of the thyroid in persons of different age groups may behave in unlike ways.(2) It is for this reason that the treatment of carcinoma of the thyroid as it may present itself in various clinical forms is to be discussed. Each clinical form will be the subject of a brief discussion.

## PROPHYLAXIS

Before entering into any discussion of the active treatment of any form of carcinoma of the thyroid, more than a few words should be devoted to the prophylactic treatment of carcinoma of this gland. It is naturally easier, under certain conditions, to prevent carcinoma than to cure the disease when situated in this location. I wish to call particular attention to one precancerous condition which may exist in the thyroid gland. This condition may be easily and effectively treated before the transformation into cancer has taken place. This pre-malignant condition which may exist is the thyroid adenoma. In order of their malignant potentialities we find these forms:

1. Solitary non-toxic adenoma.
2. Multiple non-toxic adenomata.
3. Solitary toxic adenoma.
4. Multiple toxic adenomata.

The exact incidence of carcinoma of the thyroid is difficult to ascertain. The incidence of carcinoma arising in nodular goiter for all practical purposes is available only on surgically removed goiters. The number of patients dying with nodular goiter having malignant transformation cannot be accurately evaluated. This is because removal and evaluation of the thyroid gland is not routinely done by most pathologists. The percentage of malignant change in non-toxic nodular goiter, however, is greater than is generally realized.

One outstanding factor predisposing to the development of carcinoma of the thyroid gland is the solitary, non-toxic adenoma. Depending upon which statistics one uses, the condition is actually or potentially malignant in fifteen to

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twenty-five percent of solitary, non-toxic, adenomata.

Multiple non-toxic nodular goiter also undergoes carcinomatous changes, although not so frequently as the solitary variety. Figure 1 shows the incidence of carcinoma in nodular goiter, both solitary and multiple found at the Illinois Research Hospital from 1936 to 1948.(3) From these figures it is seen that it is imperative that all of these pre-malignant adenomata of the thyroid gland, particularly the solitary variety, be removed as early as possible.

Richards, McCoullough, and Crile, in a paper read at the annual meeting of tthe American Goiter Association, in March of 1950, entitled "Radio-active Iodine in the Treatment of Hyperthyroidism of Nodular Goiters" state that they never treat solitary adenomata wih radio-active iodine. They say they do not do this because of the malignant potentiality of this condition. All solitary adenomata, particularly the non-toxic variety, should be removed before a malignant transformation has taken place. The removal of all solitary non-toxic adenomata, of itself, will cause a marked reduction in the incidence of thyroid cancer.

## CARCINOMA LIMITED TO THE THYROID GLAND

A relatively optimistic prognosis may be anticipated in a carcinoma of the thyroid which is limited to one lobe. This is particularly so if the carcinoma is a papillary type of growth, or in which the carcinoma is a solitary malignant adenoma with the tumor still localized within the adenoma. This is the earliest form in which carcinoma of the thyroid gland can hope to be detected clinically and grossly. The treatment of this condition is total removal of the lobe of the thyroid on the involved side together with the isthmus of the thyroid gland. Adequate visualization of the dissection with a complete view of the recurrent laryngeal nerve, is necessary if one is to avoid damage to these important structures.

It is because of the possibility of carcinoma being present, that total removal of one lobe of the thyroid gland when the pathology involves only one lobe, is preferrable to subtotal removal leaving the posterior portion of the lobe intact. It is true that it may be technically easier to do a subtotal lobectomy, than to do a total removal of one lobe. It is only by removal of the entire lobe, however, that one precludes recurrence within the lobe, or the omission of removal of all multicentrically originating carcinomata, of the thyroid lobe. It has been pointed out by Black(4) that at the Mayo Clinic in thirty-six cases in which subtotal lobectomy was performed for papillary carcinoma, there was recurrence in the residual thyroid in four per cent of these cases. In twenty-three cases in which total lobectomy was performed there were no recurrences.

We may mention in this category the unsuspected carcinoma of the thyroid gland still within the confines of the capsule. In this case we take those cases in which thyroidectomy was done for some other cause besides carcinoma of the thyroid, as for example: solitary or multiple adenomata, either of these being toxic or non-toxic; Graves' disease, Riedel's struma or Hashimoto's struma. The tissue removed is submitted to the pathologist for pathologic examination at the time of operation, and the report is returned that carcinoma of the thyroid is present. It is important to know whether or not this is papillary, alveolar and follicular, or a solid type of carcinoma. However, it is even more important to know that one has removed the entire lobe on the involved side. For this reason, again, I wish to state that whenever possible, total lobectomy is the treatment of choice, particularly when adenomatous goiter involves one lobe of the thyroid gland.

When a multicentrically originating carcinoma of the thydoid gland is found at the primary operation, total thyroidectomy is the operation of choice, due care being taken to preserve as much of the parathyroid tissue as possible. This operation may produce myxoedema, but the patient can then be carried on thyroid extract and proceed to do very well while on this medication.

One thing is certain, and that is that at the present time the method of treatment which offers the greatest possible chance of cure is surgical removal beyond the extent of the tumor. This places a grave responsibility upon the first person operating upon a patient in which a carcinoma of the thyroid is present or suspected. The initial operator should be able to recognize the pathology of the disease. Pre-operatively, he should be able to plan a surgical attack with a mind toward the treatment of cancer. This means complete surgical removal, wide of the tumor, in all places, and not once encroaching

upon the tumor or breaking into the capsule of a malignant adenoma.

## LATERAL ABERRANT THYROID

Lateral aberrant thyroid, or so-called benign metastasizing adenoma of the thyroid gland, is mentioned separately only to stress one important point. That important point is that for all clinical purposes, no such thing as a lateral aberrant thyroid exists. The so-called lateral aberrant thyroid is a non-existing entity. This condition always represents an extremely slow growing metastatic carcinoma of the thyroid gland. The primary carcinoma may be clinically undetectable. The so-called lateral aberrant thyroid is a very slowly growing metastatic carcinoma from an extremely small primary growth arising in the lobe of the thyroid on the same side of the neck.

Carcinoma originating in an adenoma of the thyroid is usually papillary and may grow slowly and metastasize to the nodes of the neck very gradually. On the other hand, primary carcinoma arising in the thyroid gland itself, rather than in an adenoma, is usually of the alveolar type and spreads more rapidly by the blood stream to the lungs. When the so-called lateral aberrant thyroid carcinoma is present the condition would be treated as what it really is. It is carcinoma arising in the lobe of the thyroid with metastasis to the adjacent cervical nodes. This condition is treated best by the total removal of the isthmus and corresponding lobe of the thyroid, together with an incontinuity radical neck dissection on the involved side.

## CARCINOMA OF THE THYROID IN CHILDREN

Carcinoma of the thyroid gland in children occupies a separate chapter in the treatment of this disease. B. K. Duffy, M.D., in addressing the American Goiter Association on March 10, 1950, pointed out the predominance of the papillary form of the disease in children.(5)

The initial complaint in this age group is usually a painless swelling occurring beneath the sternomastoid muscle on one side of the neck. The swelling represents a metastatic form of papillary carcinoma of the thyroid.

Next in frequency in children is found the alveolar and follicular type. There is a greater affinity for this type of carcinoma of the thyroid in a child to take up radio-active iodine than there is for a similar microscopic type of carcinoma in an adult to take up the radio-active isotope.

The solid type of carcinoma simplex, occupy a relatively small percentage of cases of carcinoma of the thyroid gland in children.

The solid type of carcinoma which has the most undifferentiation, or dedifferentiation as one may wish to say, has the poorest prognosis, while the papillary type has the best prognosis. The alveolar and follicular type lies between the solid and papillary type as far as prognosis is concerned.

The children most commonly affected are between the ages of nine and fifteen. The disease is relatively rare below the age of six and is not common between the ages of sixteen and twenty-one. It is found in females twice as often as in males.

Realizing the extremely grave prognosis of such a condition, the primary treatment consists of total thyroidectomy with radical neck dissection of the side in which metastatic nodes are present. The dissection would be an incontinuity type of dissection including the primary growth and the structures included in the neck dissection. Surgery should usually be preceeded by radio-active iodine tracer studies.

## CARCINOMA OF THE THYROID WITH INVOLVEMENT OF CONTIGUOUS STRUCTURES BY DIRECT SPREAD

In view of recent enthusiasm over the use of radio-active iodine in the treatment of carcinoma of the thyroid, a great many workers today have lost sight of previously mentioned facts. The most effective treatment of carcinoma of this organ is by wide and complete removal of the tumor. Today this is the only method by which one can be sure of a complete cure. Should a carcinoma of the thyroid infiltrate through and beyond the capsule of the thyroid gland and into any adjacent structure, this structure should be removed with the thyroid in a block dissection. If the infiltration through the capsule of the gland takes place anteriorly into the ribbon muscles causing fixation of these to the thyroid, they should be removed in a block dissection. Should a carcinoma of the thyroid involve the thyroid cartilage of the larynx or the rings of the trachea, the larynx, or involved trachea together with the larynx, should be removed along with total thyroidectomy and radical neck dissection, if the latter is necessary. If the involvement has extended into the eso-

phagus, this structure should also be removed.

The operator should be trained and equipped to handle adequately the removal of whatever contiguous structures are involved in the carcinoma. It is only by this complete surgery that the disease is to be eradicated. Carcinoma of the thyroid gland residual in the larynx, trachea, or esophagus produces death just as surely as residual or metastatic carcinoma elsewhere. Indeed the terminal stage of the disease in these locales can be one of the worst. Rather than leaving the carcinoma to be treated by radio-active iodine therapy, x-ray or radium, the entire area of carcinoma should be removed surgically whenever possible. This should be done even though laryngectomy, cervical esophagectomy, or laryngo-esophagectomy together with thyriodectomy and radical neck dissection is necessary.

## CARCINOMA OF THE THYROID WITH METASTASIS LIMITED TO THE CERVICAL LYMPH NODES

This type of carcinoma is usually of the papillary type. This histological type of carcinoma of the thyroid has a marked tendency toward metastasis to the cervical lymph nodes without evidence of further distant metastasis for prolonged periods of time. If papillary, this lesion usually remains localized in the thyroid itself for a period of many months or years before metastasizing to the cervical nodes. This has been previously mentioned under the heading of so-called lateral aberrant thyroid or benign metastasizing adenoma. It is to be developed more fully at this point.

When originating in an upper pole of the thyroid, metastases are usually found in the upper deep cervical nodes, even as high as the node immediately beneath the mastoid process. Lesions arising more deeply within the lobe spread chiefly to the lower cervical nodes as well as the nodes in the tracheoesophageal groove and also to the pretracheal nodes extending into the mediastinum. Lesions arising in the isthmus of the gland may spread to the nodes on either side of the neck, however, their main spread is inferiorly and into the retrosternal nodes of the mediastinum.

The preferred treatment for this type of carcinoma is total removal of the isthmus and lobe on the affected side together with an in-continuity radical neck dissection. This dissection includes removal of the ribbon muscles, isthmus, lobe of the thyroid, stenomastoid muscle, internal jugular vein, external jugular vein, all of the lymphatic drainage structures from the clavicle to the mastoid process and from the midline of the neck to the anterior border of the trapezius muscle, and all structures between the platysma muscles and the muscles supporting the skeletal framework of the neck. The spinal accessory nerves are usually left intact. The phrenic nerve, the vagus nerve, the sympathetic nerve trunk, the recurrent laryngeal nerve, and the carotid artery are left. Usually the parathyroid glands are left on the uninvolved side. Dissection of the digastric and submental triangles for this condition is practically never needed. From such a radical neck dissection there is minimal deformity produced and it is not evident to any great extent.

If radio-active iodine therapy is available and if isotope therapy is contemplated, tracer doses of radio-active iodine should be given before surgery and radio-autographs carried out along with the routine microscopic examination of tissue removed.

## CARCINOMA OF THE THYROID WITH DISTANT METASTASIS

Carcinoma of the thyroid gland when first seen with distant metastasis, or which subsequently develops distant metastasis, is the type of thyroid carcinoma that is best treated by radio-active iodine therapy. Radio-active iodine, or $I_{131}$, is the unstable or radioactive isotope which possesses a half-life of eight days. This is to say, that on any given date, only one-half of the quantity of radio-active iodine will remain after eight days have passed. The remainder will have undergone a nuclear transformation. It was until recently prepared by neutron bombardment of tellurium with subsequent chemical separation of the two materials. Now, however, it has been found feasible to separate radio-active iodine from other uranium fission products as by-products of pile operation. Radio-active iodine thus prepared is carrier free. That is, there is no admixture with stable iodine, and in recent months it has become tellurium free also. There is, however, some contamination of another radio-active isotope, Iodine $I_{133}$. This isotope, however, has a short half-life of twenty two hours and the degree of contamination is not great, particularly after time has elapsed in transit.(7)

The therapeutic effect of radio-active iodine

**Table 1. Incidence of Carcinoma in Nodular Goiter (Including Toxic, Nontoxic and Carcinoma) at the Illinois Research Hospital, 1936 - 1948.**

| Type of goiter | 1936-1944 | | 1944-1948 | | 1936-1948 | |
|---|---|---|---|---|---|---|
| | No. of cases | Per cent carcinoma | No. of cases | Per cent carcinoma | No. of cases | Per cent carcinoma |
| Toxic nodular | 330 | 1.2 | 48 | 0 | 378 | 1.0 |
| Solitary | (71) | 0.0 | (17) | 0 | (88) | 0.1 |
| Multinodular | (259) | 1.6 | (31 | 0 | (290) | 1.4 |
| Nontoxic nodular | 192 | 17.1 | 93 | 17.2 | 285 | 17.15 |
| Solitary | (92) | 24.0 | (51) | (25.5) | (143) | (24.4) |
| Multinodular | (100) | (11.0) | (42) | ( 7.1) | (142) | ( 9.8) |
| Total | 522 | 7.2 | 141 | 11.3 | 663 | 8.0 |

Fig. I. INCIDENCE OF CARCINOMA IN VARIOUS TYPES OF NODULAR GOITER.

on carcinoma of the typroid gland is directly proportional to the degree of function of the primary or metastatic tumor. We find that whenever the primary or metastatic tumor contains colloid, a relatively high uptake of the radio-active iodine may be anticipated. The alveolar and follicular types of carcinoma show, therefore, a much larger uptake of radio-active iodine than do the papillary or solid types of tumors. Solid forms of carcinomata, and sarcoma in particular, exhibit very poor radio-active iodine uptake. Metastatic nodules do not show any constant affinity for radio-active iodine. It is believed that metastatic nodules alternate in the process of taking up the radio-active isotope.

Usually the initial uptake of radio-active iodine by either a primary tumor or a metastatic tumor is poor and the uptake of radio-active iodine for adequate therapeutic effect must be altered by one of several means.

As long as the normal thyroid gland remains in the body and performs its function, the metastatic tumor does not tend to function. However, when the normal thyroid gland is removed, the

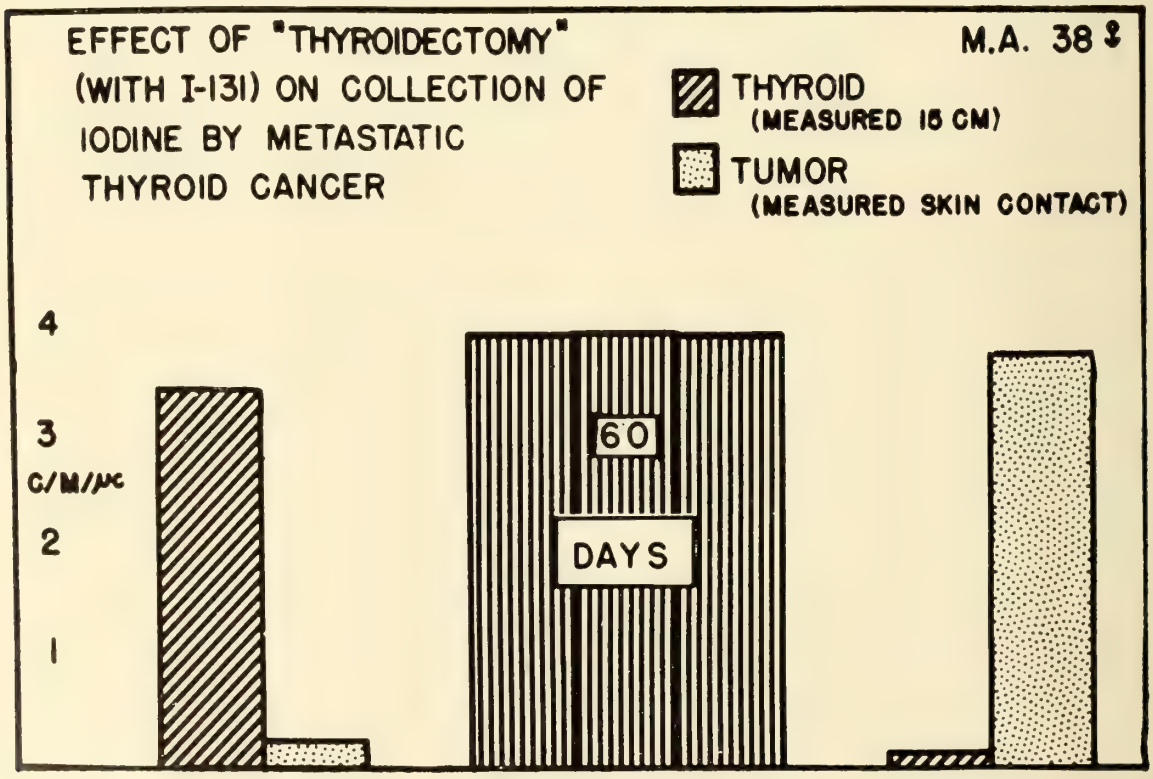



Fig. 2.—Effect of Thyroidectomy on Radioactive Iodine uptake of Metastatic Cancer.

The cross-hatched columns represent the "iodine pickup" by thyroid tissue in the neck. The stippled columns represent the "iodine pickup" by a metastasis in the spine. The activity is recorded as counts per minute divided by microcuries administered. Measurements over the thyroid were made at 15 cm. from the skin; those over metastasis were made at the skin surface. On the left are recorded measurements made before the normal thyroid was destroyed. Columns on the right show the observations made on the pickup of iodine administered sixty days after destroying the normal thyroid.

metastatic nodules tend to take over the function of the thyroid gland. So we see, that by doing a radical surgical removal of the primary thyroid carcinoma and remaining gland together with all surgically removable metastatic nodes in the neck, although no curative therapy is accomplished, the uptake in the metastatic nodules of the radio-active iodine may be increased. (Figure 2).

The uptake of radio-active iodine in metastatic nodules may be increased by the oral administration of thiouracil. The administration of thiouracil produces a pharmacological thyriodectomy. By beginning with an oral dose of four hundred milligrams per day and increasing this gradually to a dosage of two thousand milligrams per day for approximately six weeks, a change in the uptake of the metastatic nodules may be found. The uptake may be markedly increased. Figure 3 demonstrates the increased uptake in metastatic carcinoma following the use of thiouracil to increase this uptake.(6)

The third method used in increasing the uptake of radio-active iodine in metastatic thyroid cancer is by the use of thyrotropic stimulating hormones, T.S.H. This hormone is given in doses of thirty units daily for one week and after forty-eight to seventy-two hours an increase in the radio-active iodine uptake by the metastatic tumor may be anticipated. In a relative manner the metastatic lesions are stimulated to function. Figure 4 demonstrates the increased uptake in a metastatic nodule after T.S.H. therapy.(6)

Should all of these methods be tried and the uptake of the metastatic tumor be minimal very poor results with radio-active iodine can be anticipated. However, should a reasonable uptake result, the patient can be carried indefinitely on radio-active iodine given approximately every two weeks. A great many observers have found a static condition of metastatic thyroid carcinoma under radio-active iodine therapy. However, eventually all cases do show progressive spread, even while taking radio-active iodine.

If there is an excellent initial uptake of $I_{131}$, or if the initial uptake is poor and a good response to thyroidectomy, thyrouracil, or thyro-

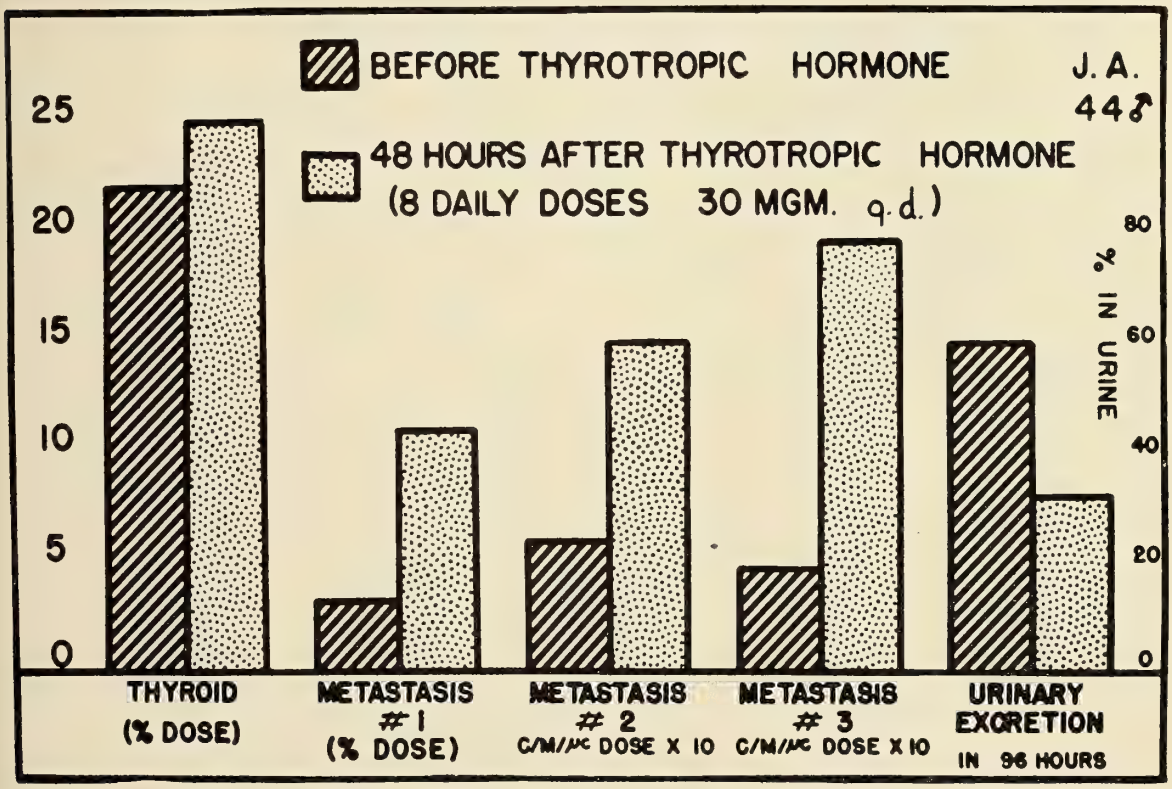



Fig. 3.—Effect of thiouracil on radioactive iodine uptake of metastatic cancer.

The cross-hatched columns represent the "pickup of radioactive iodine" by the thyroid and 3 metastases, as well as the urinary excretion of radioactive iodine prior to treatment wth thyrotropic hormone. The stippled columns represent the per cent pickup by thyroid and metastases and the urinary excretion after stopping treatment with thyroid-stimulating hormone. It will be noted that the pickup on all 3 metastases was increased after such treatment whereas there was no significant change in the thyroid's avidity for radioactive iodine. The urinary excretion of radio-iodine was decreased following treatment with thyroid-stimulating hormone.

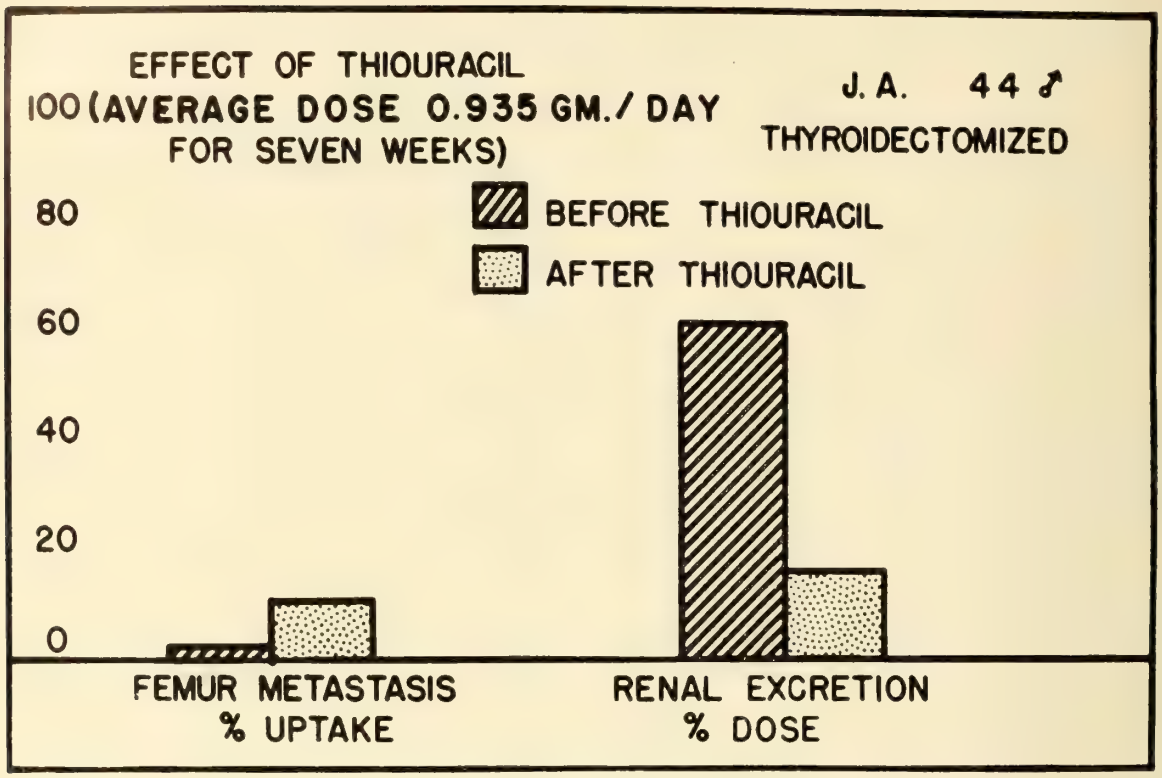



Fig. 4.—Effect of thyrotropic hormone on radioactive iodine uptake.
The cross-hatched columns represent observations on the "pick-up of radioiodine" by 1 metastasis and the urinary excretion of radioiodine before beginning treatment with thiouracil. The stippled columns represent the "pickup of I(131)" by the same metastasis and the urinary excretion of I(131) after prolonged treatment with thiouracil.

topic stimulation hormone is obtained, and the uptake of the metastatic nodules is increased, a therapeutic dose may then be given. Further studies are then done to ascertain the uptake of such a therapeutic dose, rate of excretion, etc.

Generally speaking the uptake of a metastatic nodule with radio-active iodine is decreased by the simultaneous administration of x-ray therapy or radium therapy to this nodule.

## X-RAY AND RADIUM IN CARCINOMA OF THE THYROID

Gamma-ray therapy with radium or X-ray may be used on either the primary or metastatic tumor. This is an entire subject in itself. However, several things are worthy of mention at this time regarding these therapeutic agents.

1. While using x-ray or radium therapy, the uptake of $I_{131}$ in the treated area is diminished.

2. These tumors belong to the so-called radio-resistant group of tumors.

3. When giving x-ray therapy, it should be borne in mind that to be effective a tumor dose of at least six thousand roentgens is needed in six weeks. Due care should be taken in the selection of fields, filters, and the care of the skin in order to be able to deliver this dosage. Many times it is exceedingly difficult.

4. When interstitial radium needles are employed, a tumor dose of at least six thousand gamma-roentgens should be delivered over a period of approximately one week. Low intensity interstitial needles are the method of choice.

## SUMMARY

1. A clinical classification of carcinoma of the thyroid is given for purposes of outlining proper therapy.

2. The importance of removing all non-toxic adenomata of the thyroid gland, particularly the solitary non-toxic adenoma, before malignant change has taken place, is stressed.

3. The responsibility of the initial operator in the final outcome of the condition is stressed.

4. The indications for treatment of thyroid carcinoma by means of surgery is outlined.

5. The treatment of carcinoma of the thyroid gland with $I_{131}$ is discussed.

6. The use of x-ray and radium in the treatment of carcinoma of the thyroid is mentioned.

## BIBLIOGRAPHY

(1) Frantz, F. K., et al. "Thyroid Carcinoma with Metastastasis Studied with Radio-active Iodine." **Ann. Surg.** 119:668, 1944.

(2) Frazell, Edgar L., M.D. and Foote, Frank W., Jr., M.D. "The Natural History of Thyroid Cancer." **J. Clin. Endocrinol** 9:1023, 1949.

(3) Cole, Warren H., D.D. et al. "Incidence of Carcinoma of the Thyroid in Nodular Goiter." J. Clin. Endocrinol 9:1007, 1949. (Table reproduced from article.)

(4) Black, Marden, M.D., "Surgical Treatment of Carcinoma of the Thyroid Gland." **Trans. Amer. Goiter Assn.** p. 379, 1949.

(5) Duffy, B. J., Jr., et al. "Thyroid Cancer in Childhood and Adolescence." **Cancer,** Vol. 3, Number 6, P. 1018, 1950.

(6) Trunnell, J. B., M.D., et. al. "The Treatment of Metastatic Thyroid Cancer with Radio-active Iodine: Credits and Debits." J. Clin. Endocrinol 9:1138, 1949, (Graphs reproduced from article.)

(7) Trunnell, J. B., M.D., "Treatment of Human Thyroid Disease with Radio-active Iodine.' Personal Communication, to be published.

# MODERN TREATMENT OF SOME COMMON SKIN DISEASES

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The best treatment of a skin disease is not in all cases tthe newest. Certain general principles which have been acceptable for many years are still acceptable. Some ancient methods are still as good as any. In some cases there may be several different approaches to the same problem, one as good as another. I shall not burden you with a lengthy discussion of many different forms of treatment for the same condition. It is not my intention to review the literature. I wish merely to give a concise statement of the methods I use, methods which I have found best suited to my needs. Other physicians may use other methods which to them are better suited. There is no intent on my part to imply that the methods outlined here are the only acceptable procedures.

There is one rule handed down from our dermatological grandfathers which is still important. I wish to emphasize it strongly. It is this: DO NOT OVERTREAT. Treat the skin gently. Give it every opportunity to employ its own powers of recovery. This rule is especially important in the presence of acute inflammation. Application of soothing wet dressings is most desirable at such times. A one percent aqueous solution of aluminum acetate is excellent. Occasionally an individual may respond better to a weak solution of boric acid or magnesium sulfate. A cool solution is usually better for an acute dermatitis than a warm one. If an acute dermatitis is unaccompanied by weeping and crusting, it is often desirable to follow the wet dressings with a lotion containing a powder for its cooling effect. Calamine lotion or various types of zinc oxide lotions suit this purpose admirably. Itching is usually severe in these cases. Phenol or liquor carbonis detergens may be added for their anti-pruritic properties. If weeping and crusting are present the powdery lotion should not be used. In such cases one may use a hypoallergenic cold cream. When the inflammation is somewhat less acute a paste may be used. A modification of the ancient and honorable Lassar's Paste is excellent. A subacute or chronic dermatitis may be treated with a less mild or even a stimulating agent.

There are several other general principles I wish to mention. Most of these are in the form of "Do Nots." Do not use Whitfield Ointment in full strength. It will cause irritation in numerous cases, and when used in a milder form it is quite effective as an anti-fungal agent. Thus, instead of using six percent salicylic acid and twelve percent benzoic acid, have the druggist mix the full strength ointment with an equal part of petrolatum, reducing its strength by half. Do not use ammoniated mercury in a strength greater than five percent for fear of producing sensitivity. Do not use sulfur and mercury in the same area at the same time. Such a mixture will produce mercuric sulfide and leave black deposits on the skin. Finally, avoid the use of greases in hairy parts, especially in the groins and axillae. Hair follicles in these areas become irritated by greases which set up inflammation and often produce abscesses.

## PYOGENIC INFECTIONS

Recent years have provided outstanding advances in the methods of treating pyogenic infections of the skin. In less than twenty years we have seen the introduction of a long line of sulfonamide drugs and antibiotic preparations. Some of these substances are useful only for external application. Some can be used either externally or internally. Some are best used only internally. Some are administered by injection. Some are given by mouth. Some may be administered either way. Some are more effective germ-killers than others. Some have greater sensitizing potential than others. Some are more dangerous than others. Some are more expensive than others. Obviously, therefore, in view of these many variable factors in the remedies, and the equally numerous variable factors inherent in the patient, one cannot be dogmatic in choosing one medication for any

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and all cases to the exclusion of all others.

Nevertheless, there are certain general principles which should guide us in our choice of a drug. First is the bactericidal or bacteriostatic effectiveness of the medication. This factor will, of course, be determined in part by the type of micro-organism encountered. In practice we find that a number of the preparations are almost equally effective, or near enough so that other factors may be permitted to determine the choice in many cases. For effectiveness, incidentally, we can give a high grade to our old friend ammoniated mercury as a topical agent of great value in many cases.

Next we consider the sensitizing potential of the product, and at this point is introduced a general principle of considerable importance. As a general rule it is unwise to use any agent topically which is also of importance as an internal medication. The reason is that the application of an agent on the skin may sensitize the patient to that product so that later it could not be used internally. This makes it unwise to use topically any sulfonamide or anti-biotic which may have a wide and at times urgent use internally. The degree of the sensitizing potential may modify one's actions in special cases. In this regard it should be borne in mind that penicillin is a more active sensitizer than the other popular anti-biotic products. For topical use bacitracin and neomycin fulfill the requirements better than other agents. They are both very effective, both have very low sensitizing potentials, and are both used but very little internally.

I therefore can state that I prefer neomycin, bacitracin, and ammoniated mercury in that order for the topical treatment of pyogenic skin infections.

Internal medication is also of value in the treatment of pyogenic skin infections. Penicillin, aureomycin, and terramycin are most frequently used. The general principles governing the uses of anti-biotics will guide one in these cases.

## SUPERFICIAL FUNGOUS INFECTIONS

Tinea capitis. In Arizona the commonest form of ringworm of the scalp is due to Microsporum lanosum (also known as M. canis or M. felineum.) This fungus has its normal habitat on some of our domestic animals such as dogs and cats. The organism does not thrive on the human body, and for that reason is relatively easy to eradicate. On the other hand, that form of ringworm of the scalp caused by M. audouini, which is quite infrequently seen here but is very common in other parts of the country, is at times extraordinarily difficult to cure. For the lanosum type of infection, treatment consists of manual epilation and the topical application of antifungal agents. I prefer an ointment containing three percent salicylic acid and five percent ammoniated mercury in a water-soluble ointment base. If the patient is unable to tolerate ammoniated mercury, precipitated sulfur is substituted for it. The newer agents containing fattty acids have not been useful in my hands. The hair should be clipped very short. The ointment is applied thoroughly over the entire scalp at bedtime, and is washed off completely in the morning. It is well to advise the child's mother that the treatment will have to be carried out for at least six months, or perhaps a year. Roentgen therapy is not necessary in cases of lanosum infection, but may be needed with the audouini type. The child may be permitted to attend school as soon as he is under treatment.

Tinea circinata. Ringworm of the body may occur in adults as well as in children. The lesions on the glabrous skin are usually easily eradicated by topical application of antifungal agents. A weak Whitfield ointment is very effective and usually well tolerated by the patient.

Tinea cruris et axillaris. Certain special rules govern the treatment of the skin of the axillae and groins. As stated above, it is unwise to massage greases into hairy parts, and this is especially true of the axillae and groins. Hair follicle abscesses occur frequently as a result of oils or greases being applied. Therefore a lotion is used in the treatment of tinea axillaris et cruris. A pleasant and effective lotion contains five per cent resorcin in 50 per cent alcohol. It is mopped on the affected part two or three times a day. The eruption is usually cured in two or three weeks. Some cases are recalcitrant. In such, superficial roentgen therapy is often applied.

Tinea pedis. Fungous infections of the feet vary greatly in their manifestations. For the interdigital variety (the so-called "athlete's foot") a half-strength Whitfield ointment is very satisfactory. It is massaged gently into the affected skin at bedtime and washed off in the morning. Secondary pyogenic infection is not

uncommon. It is treated in the manner described above for such conditions. Often a vesicular reaction will occur on the soles and palms ("id" reaction.) The larger vesicles are opened by cutting through them with a fine, sharp-pointed scissors. An exfoliating shake-lotion is applied frequently. A very satisfactory preparation is a zinc oxide shake-lotion containing one percent phenol, three percent liquor carbonis detergens, and five percent resorcin. Superficial roentgen therapy is most useful in many of these cases. Sometimes the infection becomes quite chronic and takes on hypertrophic characteristics. In such cases a modified Whitfield ointment or a crude coal tar ointment is used in conjunction with superficial roentgen therapy. Asterol is a new benzothiazole derivative which has been highly recommended. It, like the fatty acid preparations, has not, in my experience, produced outstanding results.

## ACNE

In spite of the fact that many new suggestions have been made in recent years concerning the treatment of acne, dermatologists generally agree that none of them can supplant the conventional methods. Much has been written about the use of estrogenic substances in such cases. Although these agents seem to help somewhat in a few cases, they have not been found to be consistently dependable. Most dermatologists therefore have come to use them only as part of the treatment in only some of the patients. The same holds for the use of some of the antibiotics which have been recommended. Some patients seem to be benefitted somewhat by these agents, such as the cases of cystic acne which are helped by terramycin, but most are not. In general the agents mentioned above may be found useful in acne when there is some other indication for their use. The same may be said for other drugs such as iron, thyroid extract, and vitamin preparations.

Therefore we fall back on the conventional form of treatment. First, the patient's general health must be considered. Anemia, dental faults, and other abnormalities should be corrected. Health habits should be sensible. Adequate rest should be obtained. Moderate physical exercise is desirable. The diet should be adequate, but with the restriction of certain foods known to be undesirable for these patients. Fat, greasy foods are forbidden. Chocolate is forbidden because it is known to be specifically irritating to the pilosebaceous apparatus. Iodine is likewise irritating. Therefore the patient is warned against iodized salt and seafoods, the latter being very rich in iodine. Sweets as such are not forbidden, although they should be moderately restricted. Otherwise, dietary restrictions are not required.

Local treatment is very important. Of the drugs used externally, sulfur is the best. It is well used in the form of Lotio Alba, handed down to us from previous dermatological generations. Intraderm Sulfur Solution (Wallace) penetrates deeply into the follicles and is found to be helpful in many cases. Usually it is advisable to use a lotion rather than an ointment for the topical treatment of acne.

Included in the local treatment of acne is the general cleanliness of the skin and the emptying of comedones and pustules. Soap and water is the best method of cleansing the skin. A mild toilet soap is best. Medicated soaps are both unnecessary and undesirable. For unusually oily skins, chemical cleansing may be desirable. Seba-Nil (Texas Pharmacal Company) is a product found to be useful in this regard. It contains alcohol, acetone, and a sorbitan monolaurate derivative. A cotton pledget is moistened with this solution and wiped over the face thoroughly once or twice a day. An anti-seborrheic agent such as salicylic acid or resorcin may be added to the Seba-Nil. Mechanical expression of the contents of the comedones and pustules can and should be done by the physician, a few lesions being so treated at each office visit. The patient should be discouraged from carrying out this procedure at home for fear of damaging the tissues and thereby producing unnecessary scarring.

Superficial roentgen therapy still is the one modality at our command which stands head and shoulders above any other single method or combination of methods in the treatment of acne. This treatment should be given only by a dermatologist trained and experienced in its use. A course of twelve weekly treatments is given, each dose amounting to 50 or 75 roentgens. This amount of radiation is far under the average tolerated total. In fact, more such treatment may be given later to most patients if it seems to be desirable.

Most important of all, I wish to impress upon everyone the fact that acne treatment is successful in the vast majority of cases. It is im-

portant for all doctors who come in contact with such patients to urge them to submit to treatment. These young people need help. We must try to prevent dermal scars. We must also try to prevent psychic scars. The strain on the emotional make-up is tremendous. We have at our disposal good methods of treatment. Let us never tell such a patient that he or she does not need treatment, or that he will outgrow his condition. We must treat these young people. We must prevent scars.

## SCABIES

The treatment of scabies has improved considerably in the last few years, not in its effectiveness, but rather in the fact that the modern treatment is easier and more pleasant for the patient to use. The oldfashioned sulfur treatment is perfectly effective, but it has been largely abandoned because of its messiness. Benzyl benzoate has proved to be somewhat unsatisfactory because it is highly irritating to the skin, especially in the presence of excoriations or secondary infection. Also it requires the very careful co-operation of an intelligent patient to insure its greatest effectiveness. Therefore one of the preparations containing the gamma isomer of hexachlorocyclohexane is now considered to be best. Gamiso Cream and Kwell Ointment are two such preparations. The patient is instructed to bathe and then apply the ointment over the entire body from the neck down. In infants the head must also be treated, for in them the infestation may involve all surfaces. The ointment is kept on overnight and washed off the next morning. A second application is made the following night in the same manner as before. On the morning after the second application the patient bathes and puts on clean clothes. All clothing and bedclothing used during and before the treatment must be boiled, ironed with a hot iron, or drycleaned and steam-pressed. All other persons who have been exposed should take the treatment at the same time. Children should be excluded from school until they have completed the course of treatment.

## USE OF CORTISONE AND CORTICOTROPIN

Cortisone and ACTH have been found to be useful to a limited extent in a few common skin diseases. Their use in the more uncommon disorders does not concern us here. Psoriasis is one of the commoner conditions in which these hormones have been given extensive trial. The results have been disappointing, although some patients show a temporary favorable response. Atopic dermatitis (disseminated neurodermatitis) is a disease in which the hormones can be used to advantage at times. The severe exacerbations of the disorder can be helped. The patient can be helped over the rough spots, so to speak. But here again the benefit is only temporary. In the end we must go back to the conventional forms of treatment. Certain forms of urticaria seem to be cleared up entirely and permanently by this form of treatment. I speak especially of acute urticaria, and most particularly of that type which follows the administration of penicillin. The results at times are miraculous. Within six to twelve hours, often, the patient experiences relief. Usually two or three days of such treatment is sufficient to give complete and permanent relief. Eczematoid dermatitis (or nummular eczema) is another common trouble which at times shows excellent response to treatment with these hormones. Many times, of course, a complete cure is impossible. Nevertheless, there are some cases which, after a relatively short period of such treatment, clear up completely and presumably permanently. Finally, drug reaction should be mentioned as a group of conditions which at times respond dramatically to the use of these hormones.

This medication can be carried out in office practice. The cortisone is given by mouth. Usually tthe patient is ordered to take one tablet (25 milligrams) three or four times a day. Most of the time this dosage is reduced after two or three days. It is desirable to reduce the dosage as soon as possible to the smallest maintenance dose which will be effective. Sometimes as little as 12.5 milligrams once or twice a day will be sufficient. ACTH is available now in such form as to be usable on the ambulatory patient. Often, in office procedure, an injection of 40 milligrams of ACTH is administered at once to start the treatment, after which cortisone is ordered for the patient to take by mouth at home. Always, it should be remembered, the conventional methods of topical therapy are employed along with the hormone treatment.

## QUOTANE AND SELSUN

There are two rather new preparations which

I wish to mention independently and in a somewhat isolated manner.

Quotane is a substance with a complicated chemical structure which has been found to be helpful in the relief of itching. It is available in ointment and lotion form. It acts as a mild surface anaesthetic. It has a low sensitizing potential. It is therefore useful in such conditions as contact dermatitis, neurodermatitis, pruritus ani et vulvae, and many others.

Selsun is a shampoo containing selenium sulfide as its active ingredient. It is an extremely valuable anti-seborrheic agent, and has become the drug of choice in the treatment of all forms of seborrhea capitis. It has a low sensitizing potential, although there are a few patients who are unable to tolerate it. It is easy and pleasant to use, and has an important place in modern dermatological therapy.

## CONCLUSION

Time has been short, but an effort has been made to describe treatment which has proved to be successful for a number of skin diseases which are rather common, and which might be encountered frequently in the general practice of medicine. Also, certain therapeutic pitfalls have been pointed out, and means described by which they might be avoided. Practically all of the methods described here can be adequately carried out without specialized training or equipment, the only exception, in fact, being the use of superficial roentgen therapy. These modern methods are, in certain cases, far superior to those available to us in the past.

# PHOENIX *Clinical* CLUB

## MASSACHUSETTS GENERAL HOSPITAL CASE NO. 17431

**The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.**

Dr. Even M. Gundersen*: *First admission.* This patient was a thirty-two-year-old married Canadian who entered the hospital for the first time on September 26 last year complaining of a skin eruption of four months' duration.

Four months before this admission he suddenly noticed the onset of a rash over his forehead. It was blotchy and purplish but did not itch. When he took a bath he noticed it on his chest and back as well. From the onset it was quite constant until admission and did not change in any significant way. Three months before admission he first noticed that one of his postauricular glands was beginning to swell. This disappeared spontaneously after a week. A week after that however several glands on the left side of his neck started to swell, and from that time he noticed enlargement of the glands in his groins also. One week before admission he first noticed constitutional symptoms in the form of slight weakness and fatigue on exertion. He had a few night sweats as well, but no fever so far as he knew.

He was seen in the Outpatient Department several times, in the Skin Clinic first, and was shown at the New England Dermatological Association. It was felt that this skin condition was mycosis fungoides. At a visit to the Male Medical Clinic, in addition to the enlarged glands in his axillary, cervical and inguinal regions it was found that the spleen was palpable one centimeter below the costal margin on inspiration. There was slight dullness at the right base with a few crackling rales. Several blood studies were undertaken there. On three occasions it was found that he ran a leukocytosis of 11,000 to 14,000. His smear was not remarkable except that there was an eosinophilia of 4 to 8 per cent.

His past history is essentially negative except for pneumonia sixteen years ago.

On admission he seemed to be well developed and nourished and in no distress. The skin of his forehead, chest and back was covered with a blotchy flat maculopapular purplish eruption, the lesions varying in size from the size of a dime to that of a quarter. There were pea-sized firm non-tender glands in the cervical, axillary and inguinal regions. In the axillary and inguinal regions the glands were matted together. There were fine consonating rales at

*Recently senior interne on the East Medical service.

both bases in the back, with dullness but no change in fremitus or character of the breath sounds. The spleen was palpable two centimeters below the costal margin on inspiration. The rest of the physical examination was negative.

On admission the white cell count was 21,000. There was no anemia, but the smear showed 40 per cent polynuclears, 48 per cent lymphocytes, 4 per cent myelocytes and 7 per cent eosinophiles.

A biopsy of the left cervical glands was done. He was discharged eleven days after entry.

*History of interval.* His first course of x-ray treatment was continued after discharge. He had three treatments per week for a month, then went back to work and felt fairly well except that he was weaker than usual. About Thanksgiving time on awakening one morning he noticed marked swelling of the face. His eyes were almost closed. He reported again at the Tumor Clinic. Another course of x-ray treatment was started. The swelling disappeared after two treatments. He was able to continue his work. About New Year's time however he noted swelling of the genitalia. He had another course of x-ray treatment. This swelling likewise disappeared. During January he was becoming much weaker. That was one month before his second admission. He was also dyspneic on exertion and had to give up his work. During the course of x-ray treatment in January he noticed that he was becoming very pale.

*Second admission.* On January 25 he had to be readmitted for this course of x-ray treatment because he was too feeble to be carried on as an ambulatory case.

Physical examination was essentially as it had been previously except for marked pallor. He appeared much sicker than at tthe previous entry. The spleen was palpable. The glands were about as before. The chest signs were as before. The liver was thought to be just palpable on inspiration.

X-ray treatment was continued. The anemia was getting very alarming. After eight days of treatment we decided to transfuse him. On that day however he had a fever of 102° by mouth and a rise in respirations to 40. He then showed definite signs in the right chest, chiefly in the upper lobe, signs of consolidation, quite obviously bronchopneumonia. There was no chill, and the picture was not characteristic of lobar pneumonia. This infection might have been picked up in the ward, because we had a few bad respiratory infections at that time. He ran a febrile course. The temperature rose to 104° and was 100° at the end. The respirations were rapid at first. They finally came down to 35 at the end. Six days before he died he had a severe pleuritic pain in his left chest posteriorly, and from that time definite signs of consolidation at the left base, later consolidation at both bases. He had made a very poor response in white blood cells, never over 12,000. His initial count was 8,000 at the second admission. On February 12 he died.

DR. W. WARNER WATKINS:

Summary of the Case History

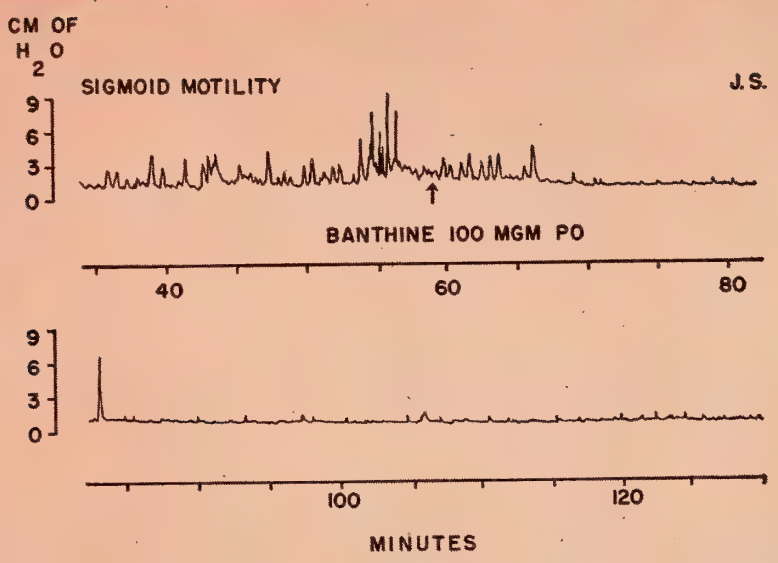
A 32 year old married man who, sometime in May of the year preceding his death, first noticed a skin rash on his forehead, this being blotchy and purplish, but did not itch. Being spring time in New England, he discarded his winter flannels and took a bath. This gave him a chance to look at his chest and back, and there he found the same sort of rash. The rash is said not to have changed significantly during the next four months, but maybe he didn't bathe again. Three months after first noticing the skin rash, a lymph node behind one ear enlarged but subsided spontaneously. However. nodes in the neck enlarged and then the glands in the groins became swollen.

A week before admission, he felt fatigue and weakness and had some night sweats without fever. In the Skin Clinic and before a Dermatologist Association, it was felt the condition was mycosis fungoides. In the Male Medical Clinic he was found to have enlarged cervical, axillary and inguinal nodes, and also an enlarged spleen. There was slight dullness at the right base with a few crackling rales.

(NOTE: The x-ray machine was either out of commission or else this case antedates the discovery of x-rays, since there was a positive indication for investigation of the chest and lungs by x-rays, at this point).

Several blood studies were made, but no details about the findings given, except note of leucocytosis of from 11,000 to 14,000, with 4 to 8 per cent eosinophiles. He entered the hospital on Sept. 26th, having lost four vital months so far as treatment is concerned.

Physical examination showed a well developed




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1. Kern, F., Jr.; Almy, T. P., and Stolk, N. J.: Effects of Certain Antispasmodic Drugs on the Intact Human Colon, with Special Reference to Banthine (β-Diethylaminoethyl Xanthene-9-Carboxylate Methobromide), Am. J. Med. *11*:67 (July) 1951.

2. Lepore, M. J.; Golden, R., and Flood, C. A.: Oral Banthine, an Effective Depressor of Gastrointestinal Motility, Gastroenterology *17*:551 (April) 1951.

ACCEPTED COUNCIL ON PHARMACY AND CHEMISTRY AMERICAN MEDICAL ASSOCIATION

RESEARCH IN THE SERVICE OF MEDICINE **SEARLE**

and well nourished man, in no distress. The forehead, chest and back were covered by a blotchy, flat, macolo-papular purplish eruption, with lesions varying in size from a dime to a quarter. There were pea-sized, non-tender, nodes in cervical, axillary and inguinal regions, being matted together in the latter two areas. Rales at both bases in back. Spleen was palpable, which means enlargement. (X-ray machine still not working).

Blood count: White cells 21,000, 40% polys, 48% lymphocytes, 4% myelocytes, 7% eosinophiles. Biopsy of left cervical node was made and this doubtless established the diagnosis, and he was started on x-ray treatment, four months late. Only details of this treatment are that it was three times a week for a month. No dosage is given, nor locations of fields radiated, whether the enlarged nodes or the skin lesions, or whole body radiation. He improved and returned to work, though feeling weaker than usual.

After about a month, or around Thanksgiving, he woke one morning with face swollen enough to close his eyes, doubtless from pressure of cervical nodes on veins or lymphatics of neck. Further x-ray treatments, without details, except that it was effective in reducing this swelling of the face. He went along about another month, and then the inguinal nodes apparently enlarged, as the genitalia became swollen, and this swelling subsided after further x-ray treatment, no doubt to the inguinal nodes.

During January he became dyspneic on exertion, grew much weaker and had to give up his work. Diagnostic x-ray machine was still not working.

On Jan. 25th he re-entered the hospital to continue x-ray treatment. After eight days of treatment, and while they were contemplating blood transfusions for the profound anemia which had developed, bronchopneumonia or some other type of lung involvement wrote "FINIS" to his troubles on Feb. 12th.

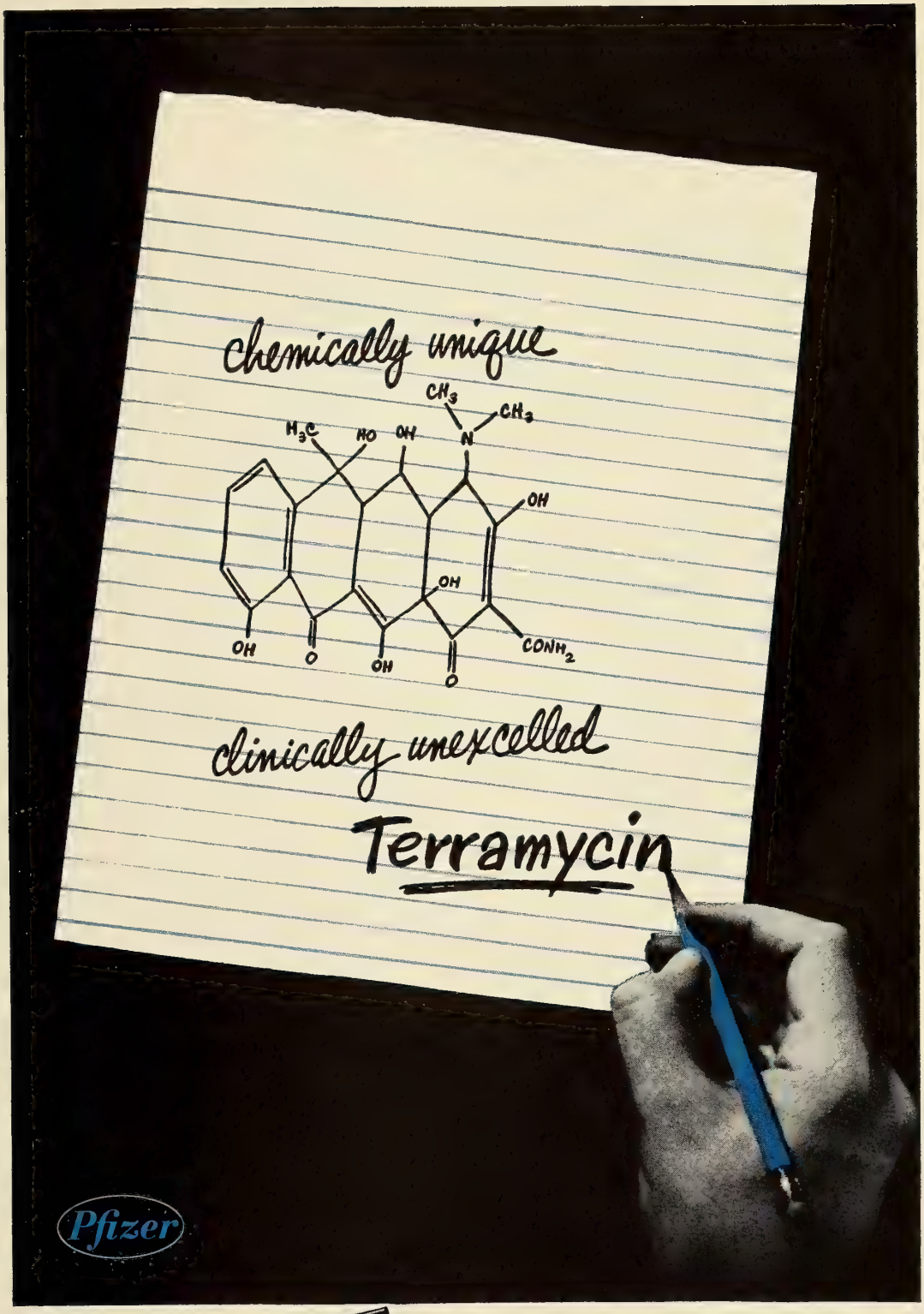
My first inclination, on reading over this case history, was to by-pass the normal purpose of these discussions, which is to attempt a diagnosis, and digress into a review of the present status of the treatment of the lymphomas, by the three methods which are now being used or which are under research investigation. These are, (1) the application of x-rays externally, by several technics, including whole body radiation; (2) the internal irradiation by radioactive isotopes; and (3) chemotherapy with nitrogen mustard, TEM, aminopterin, ACTH, and other synthetic chemicals. However, interesting as that would be, I have resisted that temptation, and will follow the more or less familiar patttern of our weekly discussions.

This patient had a disease in which the first visible signs were on the skin of the face and trunk. Two groups of observers diagnosed the condition as mycosis fungoides. To reject the unanimous opinion of eminent New England dermatologists would seem to be a very disrespectful procedure. However, we have the advantage of knowing what the course subsequent to their observation was. Also, we know Dr. Judge Phillips, who is an excellent exemplar of the admonition,'—"When the Greeks come bearing gifts, be very watchful of the hand concealed in the hip pocket." So, it would be very much out of character for Judge Phillips to present us with a case carrying a gratuitous diagnosis, unless he just wants a discussion of a very interesting condition. I am inclined just to smell that bait,—and pass on.

A bird's eye view of this case indicates that it belongs to that group of diseases which Anderson calls "dermatopathic lymphadenopathies," which covers a lot of territory. The rapid response to x-ray therapy narrows the field of possibilities down to the radiosensitive lymphomas of malignant type. The malignant lymphomas with skin manifestations which must be considered are,—(1) Mycosis fungoides, (2) Hodgkin's Disease, (3) Lymphosarcoma or leukosarcomatosis, (4) the Leukemias, (5) Lymphocytoma or Spiegler-Fendt's sarcoidosis of the skin.

In the differential diagnosis, the choice of any of these must needs satisfy four criteria,—(a) the skin lesions, (b) the lymph node and splenic enlargements, (c) the blood findings, and (d) the clinical course which includes the response to x-ray treatments. Proceeding from the less likely to the more likely:—

Lymphocytoma, or Spiegler-Fendt "sarcoid" of the skin, is mentioned and discarded without discussion, since its manifestations do not fit all the criteria. We recognize the existence of such a disease, because it is just the sort of crazy case which a jocular pediatrician would enjoy dropping in tthe laps of a dermatologist, an ophthalmologist and a radiologist,—and watch them squirm.




DON'T MISS 

APPEARING REGULARLY IN THE J. A. M. A.

WHEN WRITING ADVERTISERS PLEASE MENTION THIS JOURNAL

Leukosarcomatosis or Lymphoscarcomatosis, according to Anderson, is a condition in which there is more or less localized lymph node enlargement, associated with skin infiltrations. The skin lesions are usually nodular rather than flat or macular. When the infiltration spreads within the skin, it still produces lumpy areas. Usually the lymph nodes enlarge before any skin lesions develop, though this order may be reversed. There is no characteristic blood picture in lymphosarcoma. When anemia does develop it is usually normocytic, but eosinophiles and monocytes are common.

Leukemia, whether lymphatic or myelogenous, may be acute, subacute or chronic. The time interval would put our case in the subacute class, and in that group the type is frequently subleukemic or aleukemic, with blood counts 15,000 or below, and with a few immature cells in the blood smears. In our patient, the blood count on admission showed a leucocytosis of 21,000, with a decrease in the polynuclears and a relative lymphocytosis. At that time there was said to have been no anemia which is taken to mean the red count and hemoglobin were normal. Shortly, there was rapid development of anemia. The 4% myelocytes and 7% eosinophiles deserve consideration. Myelocytes do not normally appear in the blood stream, and certainly not to the extent of 4%. When present in such numbers, it becomes necessary to exclude myelogenous leukemia. With a blood count and cytology which are suggestive but not conclusive, a bone marrow study is indicated. The clinicians in charge apparently were satisfied that this was not leukemia, but it seems to me they dismissed this possibility without sufficient consideration. Skin lesions may occur in any of the leukemias. They present characteristic tumor-like infiltrations in well circumscribed areas which vary much in size. They may be located beneath the skin surface with reddish or brown discolorations over them. They may occur in plaque formation. The most common site is the face, but lesions may develop on the trunk or extremities also.

Mycosis fungoides, or granuloma fungoides, must not be discarded just because we suspect the gratuity of the diagnosis. The New England dermatologists may even have been right! This condition is described as having three clinical stages,—the premycotic, the infiltrative, and the fungoid. There is much interesting variation in the lesions in these three stages, which time does not permit me to discuss in detail. In the infiltrative stage, there are firm, slightly elevated, bluish-red plaques, and those described as shown by our patient would be consistent. The fungoid stage follows the infiltrative by several months, with tumefactions in the skin up to ten cm. or more in diameter. There may be lymph node enlargement, and visceral invasion including the spleen. There is usually severe pruritus, which was absent in our patient,—a fact of diagnostic significance.

In Lymphogranulomatosis or Hodgkin's Disease, as it well known, the lymph node enlargements are the prominent features of the condition, but skin lesions are frequent and sometimes the most striking manifestations of the disease. Usually the skin lesions develop late in the disease, but can show up early, and in rare cases are the only visible evidences of Hodgkin's. The appearance of the skin lesions of mycosis fungoides and of Hodgkin's are very similar, and differentiation by clinical evidence or histologic examination of involved lymph nodes is required,—as apparently was the case with our patient.

Any diagnosis chosen in this case must be consistent with the clinical course, the salient points in which were,—

The rapid course of mine months.

The appearance of a blotchy, purplish rash on the forehead, and then on the chest and back, as the first presenting symptom.

Lymph node enlargements, first post-auricular, then cervical, axillary and inguinal.

Quick response of lesions to radiotherapy, with rapid recurrence also.

Evidence of visceral involvement, especially splenic, possibly pulmonary, with weakness and anemia.

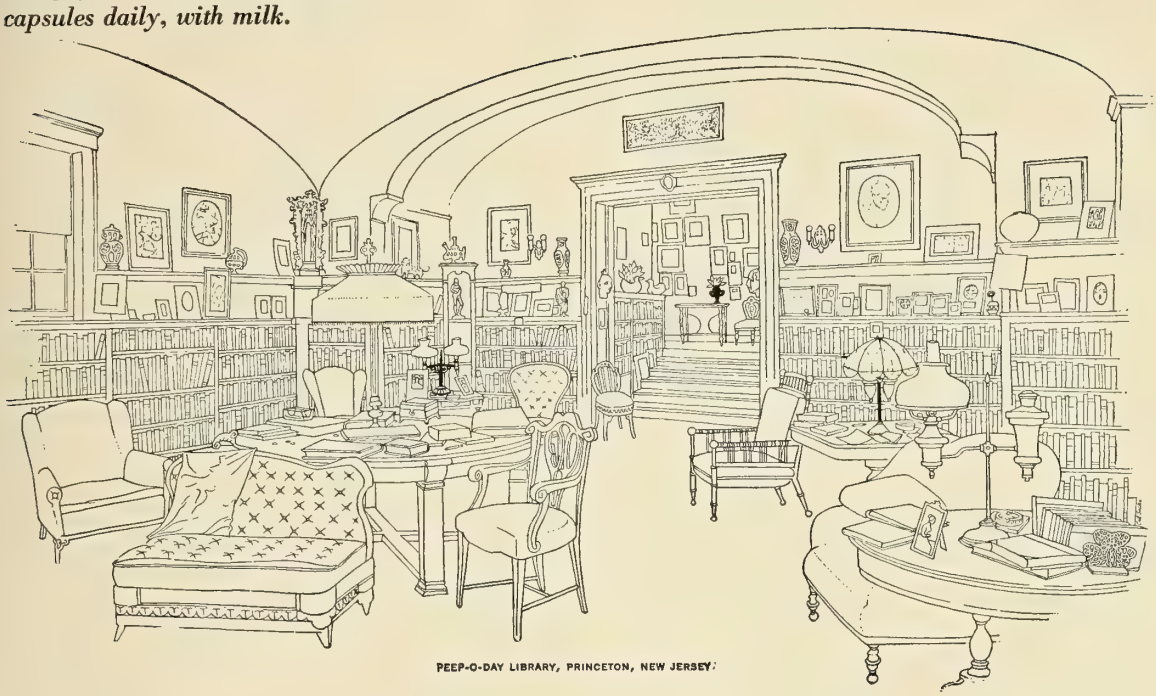
Leucocytosis with some abnormal cells and a relative lymphocytosis.

Terminal lung involvement, diagnosed bronchopneumonia, but thtis could have been invasion of the lungs by the lymphoma. X-ray examination would have given valuable information.

We are, therefore, ready to check the field of entrants in this diagnostic horse race, to see whether these several candidates can qualify, or should be scratched.

We have already scratched lymphocytoma or Spiegler-Fendt's sarcoid.

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Lymphosarcomatosis: The facts that this ought not to begin with a skin rash; that the lymph nodes should be larger than pea-sized; that the clinical course should not be so rapidly fatal under x-ray treatment; that the blood pictture is atypical for lymphoscarcoma unless there is bone marrow involvement,—make this entrant a long shot and only gamblers who like 25 to one odds would bet on this diagnosis.

Leukemia of the subleukemic variety cannot be brushed off as readily as was apparently done in this case. It can start with a skin rash, then develop enlarged lymph nodes and terminate by visceral involvement of spleen and liver. However, the skin lesions are usually different in appearance from those described. The blood picture is the main evidence favoring this diagnosis, and if we are going to pay any atttention to the blood counts, we will need to give serious consideration to subleukemic leukemia. We accept this entrant at ten to one odds.

Mycosis fungoides was the favorite in the first heat of this race, and everybody was betting that way. However, there were some doubts, because they had a cervical biopsy and the results of that probably changed the odds. They started x-ray treatments but that does not mean much, since that is the appropriate treatment in any of the lymphomas under consideration. The lesions of mycosis fungoides are even more radiosensitive than those of Hodgkin's disease. Enlargement of the lymph nodes is not usual with mycosis fungoides and is the main argument against it. However, enlarged nodes and visceral involvement are sometimes found in this condition, and could alter the blood picture. These doubts increase the odds on this entrant to about four to one.

Hodgkin's disease, therefore, takes the place of favorite in this race, with even odds. This case closely resembles one which Dr. Frissell and I struggled with for a year. The patient, a young Phoenix lawyer, first went to Dr. Cruthirds with a submaxillary swelling, which the doctor aspirated and submittted material for cytologic study. Abnormal cells were found which suggested that tthe swelling was probably a lymphogranuloma or Hodgkin's. Biopsy of the node confirmed this. Only a single node was palpable at that time and this disappeared after x-radiation. Cervical nodes on the opposite side next enlarged and about tthe same time skin lesions began to appear, first on the face and then on the chest and back. These were fairly well circumscribed brownish plaques or tumefactions. These would promptly disappear with moderate doses of x-ray, but new ones began to develop faster than we could safely treat them. Axillary and inguinal nodes enlarged and subsided under x-ray treatment. Patient developed anemia with a leukopenia. He went to Mayo Clinic, where diagnosis was confirmed, and treatment given there to liver and spleen, on account of jaundice and splenomegaly. There were also some pulmonary infiltrations. He was given some nitrogen mustard at Mayo's, but neither this nor further radiation halted his downhill progress and fatal cutcome. In our patient under discussion, the altered blood picture would probably be best explained,—if Hodgkin's is being considered,—as due to invasion of the bone marrow by the disease.

These entrants, therefore, line up at the post about as follows:—

Favorite and first choice with odds even,—Hodgkin's disease, with skin manifestations, visceral and bone marrow invasion and possibly lung involvement.

Second choice,—odds four to one,—Mycosis fungoides.

Third choice,—odds ten to one, Subleukemic leukemia.

Fourth choice,—25 to one long shot,—Lymphosarcomatosis.

DR. LOUIS G. JEKEL

In my efforts to analyze the data presented here I wish first to discuss the skin lesions. These are, it seems to me, rather non-specific. They are described as a "blotchy, flat, maculopapular eruption." I do wish, here and now, to point out that if they have any papular element (and they are said to be maculo-papular) they cannot be flat, for a papule is a raised lesion. It is seen, therefore, that the description of the skin lesions is not helpful to me. I probably would not have considered mycosis fungoides at all had it not been mentioned in the protocol. Certainly the description offered here is not that of mycosis fungoides. One might think of lupus erythematosus when reading the description in the protocol. However the course of the disease in general, the lymph node involvement, the leucocytosis, and the fact that the patient received x-ray therapy all argue

against lupus erythematosus. The eruption could be that of one of the lymphoma group of Hodgkin's Disease, leukemia, lymphosarcoma, etc. for these conditions may present indefinite and variable rashes, sometimes as specific types and sometimes as non-specific toxic rashes. From these facts it can be seen that the diagnosis of this case cannot be made from the skin lesions. As a matter of fact this part of the examination does not help me at all. And why, or why, was there not a biopsy of the skin?

Next I wish to discuss the lymph nodes. The examination of these does not help me either. The diagnosis was made, no doubt, by the lymph node biopsy, but the results are carefully hidden. I believe, though, that the lymph gland enlargement and the fact that a lymph gland was biopsied—and the result hidden from us—and the fact that tthe patient received x-ray therapy all indicate that the patient suffered from a lymphoma. Leukemia seems to be ruled out by the blood picture, so we must consider Hodgkin's disease, lymphosarcoma, giant follicle lymphoma, reticulum-cell sarcoma, lymphocytoma, lymphoblastoma, plasmocytoma, and endothelioma. Of course, any physician in charge of such a patient would have to depend finally on the microscopic studies of the lymph glands, and there is nothing very specific about the physical examination of the lymph glands in this case.

Now let us consider the blood picture. Our patient showed a fairly consistent moderate leukocytosis until the terminal phases of the disease when a relative leukopenia appeared. However, it was not a leukemic blood picture at any time. Eosinophils were slightly elevated, at one time being 7%. Four percent myelocytes were present once. These findings are consistent with Hodgkin's Disease. However, one time there were 48% lymphocytes with only 40% polys. This is *not* the picture of Hodgkin's Disease which usually shows a polymorphonuclear leukocytosis. In general therefore I think we can say that the blood picture is non-specific with whatever leaning there may be going toward Hodgskin's Disease.

Now let us look at the patient. His age of thirty-two is against the diagnosis of lymphosarcoma, and favors Hodgkin's Disease. The rapidly progressing downhill course definitely does not favor the diagnosis of giant follicle lymphoma. Yet, even when looking at the patient as a whole, we do not find specific factors which will definitely give the diagnosis. He had, apparently, some pleural effusion; he probably died finally with a terminal bronchopneumonia. It is too bad that we are told nothing about the chest x-ray, for surely one was made. Was there tuberculosis? We do not know, but the generalized lymph gland enlargement is not like that of tuberculous lymphadenitis which is more apt to be localized. Was there mediastinal involvement? I'll bet there was.

I believe the two most important examinations that were made on this patient were (1) the lymph gland biopsy, and (2) the x-ray of the chest. The results of these tests are withheld from us—for obvious reasons.

Gentlemen, you can see that I believe it is impossible to establish the diagnosis of this case with certainty from the clinical aspects as given in the protocol. Let me mention the conditions I have considered. (1) Tuberculosis; we have no chest x-ray, and no tuberculin test, and no skin biopsy. (2) Mycosis fungoides: we have no skin biopsy. (3) Hodgkin's Disease. I read too much and got myself confused by learning that some authors divide Hodgkin's Disease into three separate entities, namely Hodgkin's Paragranuloma, Hodgkin's Granuloma, and Hodgkin's Sarcoma (Jackson and Parker: *Hodgkin's Disease and Allied Disorders*, Oxford University Press, New York, 1947.) I have depended largely on the aforementioned monograph in studying this case and I wish now to quote from it: "In the last analysis, the diagnosis of any type of Hodgkin's Disease must rest on a properly executed biopsy." (4) Reticulum-cell Sarcoma. Again I quote from Jackson and Parker: "It is doubtful whether a clinical diagnosis of reticulum-cell sarcoma can be made with any degree of certainty." (5) Lymphocytoma and lymphoblastoma. Again I quote from the same source: ". . . if a patient has . . . lymphadenopathy but an essentially normal blood picture, a biopsy is necessary for a correct diagnosis. One cannot otherwise distinguish such enlarged lymph nodes from those involved by Hodgkin's Disease, giant follicle lymphoma, reticulum-cell sarcoma, or tuberculosis, nor, for that mattetr, from any other conditions." (6) Lymphosarcoma. This disease in a 32 year old patient would be a rarity. (7) Giant follicle lymphoma. Quoting again from Jackson and Parker: "It is obvious, therefore, that the

diagnosis can be made only by careful histological examination of an excised lymph node." (8) Plasmocytoma — obviously the plasma cell can be identified only on microscopic examination. (9) Endothelioma. Quoting again (same source) "endothelioma should be tolerated neither as a clinical nor as a biopsy histological diagnosis; only a complete autopsy demonstration of the absence of an occult primary carcinoma justifies the adoption of this diagnosis." (10) Next to consider is a leukemia. The blood picture is not that of leukemia although one count of 48% lymphocytes is perhaps suspicious of the lymphatic type of leukemia. We must remember, too, that a leukemia may accompany any one of the other lymphomas. (11) Sarcoidosis must be mentioned. It is not a fatal disease and we do not have much evidence here to support that diagnosis. X-rays of the chest and bones and biopsy of the skin would help.

Obviously, gentlemen, from what I have said you can see that I do not put any faith at all in a clinical diagnosis in this case. But we are required to give something. Therefore I offer as my diagnosis:

1. Hodgkin's Disease.
2. Bronchopneumonia—Terminal.

## CLINICAL DISCUSSION

Dr. William B. Breed: I came on service just two days before he developed his respiratory infection. It was perfectly obvious that he had developed bronchopneumonia, rather diffuse. There was some question at first whether it was straight lobar pneumonia. There was no way of determining which it was. We felt at the time that he probably had picked up this epidemic respiratory infection which was going about the ward.

Dr. Wyman Richardson: Was that after he was transfused?

Dr. Gundersen: It was on the day when he was transfused.

Dr. Richardson: Before or after the transfusion?

Dr. Gundersen: Shortly after it.

Dr. George W. Holmes: The interesting thing from the x-ray point of view is that he did not show any of the characteristic large mediastinal masses that we usually see in lymphoblastoma, although he did have some enlargement of the hilus shadows.

The film on your right shows some evidence of pleural thickening, but that was quite early in the disease. There is enlargement of the hilus glands and that is about all.

In the second film, which is taken with the patient lying on his back, there is diffuse mottling over the descending bronchi on both sides and enlargement of both hilus shadows, but that is not characteristic of untreated Hodgkin's disease or lymphoblastoma. In cases where the lungs are infiltrated with lymphoblastoma we sometimes get this picture. As he neared the end he developed anemia. I do not think this is different from the usual late cases. They do not respond well.

Dr. Tracy B. Mallory: On the whole he made very little response; at least his response did not last any considerable time.

Dr. Holmes: No; it was a very short remission.

We looked up some cases with temperature and we did not find any relation between temperature and treatment. Certainly the treatmen did not affect the temperature in any way. I think a person with severe anemia does not do well. I do not think that the anemia this patient had was due to treatment; it was probably due to the disease.

Dr. Francis T. Hunter: This man showed an interesting type of lymphoblastoma because he did not look like the usual type of mycosis fungoides that we see with areas of infiltration in the skin clearing in the center. Secondly, here is a man who noted the first symptoms last June. He died in February. Why he did not behave as the majority of these patients do, I do not know. Mycosis fungoides in general may go for years. It is from three to six years before deep gland involvement appears. Out of ten postmortem cases of mycosis fungiodes eight had generalized enlargement of the liver, spleen, etc. Of the other two, one died within three years of septicemia and pneumonia and the other turned out not to be lymphoblastoma but myeloblastoma. I think from the medical point of view it might be a good thing to illustrate a few of the skin manifestations of this disease. I have collected six cases from the Skin service with photographs which show the various types of skin involvement.

Dr. Edward D. Churchill: I notice that during the course of this terminal infection his white cell count did not rise above 11,000. Was that due to the effects of x-ray?

Dr. Hunter: No. I should have expected

from the few myelocytes he had that marrow was involved.

CLINICAL DIAGNOSIS

(From Hospital Record)

Lymphoblastoma (mycosis fungoides).

Bronchopneumonia.

ANATOMIC DIAGNOSIS

Malignant lymphoma.

Lobar pneumonia.

PATHOLOGIC DISCUSSION

Dr. Mallory: At autopsy we found very little evidence of the skin lesions present. It is quite surprising how a very marked skin lesion can apparently disappear entirely postmortem. So much of its prominence depends on local congestion that it may not be at all evident at the postmortem table. We found only a slight remnant of the macular rash on the forehead.

Within the body we found slight but very diffuse enlargement of all the lymph nodes. The mesenteric glands were all three or four millimeters in diamter, definitely a little larger than normal. The retroperitoneal glands were a little large. The bronchial glands were not particularly hypertrophied. A very unusual feature, it seemed to me, was a diffuse induration of the entire mesentery and all the retroperitoneal tissues. Thy were white and very firm and did not appear definitely neoplastic. It seemed more like a chronic inflammatory process. The sections however proved that it was all neoplastic infiltration.

The liver was slightly enlarged. The portal areas were prominent and showed microscopically marked infiltration. The kidneys were not noticeable in gross, but microscopically also showed tumor infiltration. The spleen was moderately enlarged, 230 grams.

The lungs showed a pneumonia, lobar in type, in the upper lobes with bilateral collapse in both lower lobes. Again we could find no tumor infiltration in the lungs.

The blood cultures showed a hemolytic streptococcus, a finding which was of some interest because at that time nearly half the patients in the ward in which this man was had sore throats and positive hemolytic streptococcus cultures. It apparently was not a very virulent strain of organism, but two patients who died that week when the epidemic was present showed hemolytic streptococcus septicemia. They were both very weak. One had anemia; the other was a very old cardiac.

The question comes up how to classify this case. Pathologists and dermatologists have had a long-standing argument, not settled yet, as to whether or not mycosis fungoides is a manifestation of lymphoblastoma. The majority of pathologists in this part of the country say it is a manifestation of lymphoma. The great majority of dermatologists say no. The average case of mycosis fungoides is very difficult to diagnose histologically from cut sections. The cases show a rather wide variety of cells and not a straight-forward picture of lymphoma. After a great deal of deliberation we generally decide it is lymphoma, and usually when the cases come to autopsy we find diffuse involvement of most of the organs in the body that confirms our opinion. The lymph node removed from this man for biopsy showed a perfectly typical small round cell lymphoma, a very well differentiated type. The same is true of all the various areas which we found involved at autopsy. It was a perfectly typical involvement by lymphoma over which no one could argue. The terminal distribution suggests the distribution we find in leukemia, although there was at no time any evidence of leukemia in the blood stream. It is not typical mycosis fungoides. I think it is a different type of lymphoma. I will show you the sections on it, though the histologic differentiation of these lesions depends on pretty minute characters of the cells which I cannot bring out with the projection machine.

Dr. Holmes: Was there any involvement of the bone marrow?

Dr. Mallory: I think there unquestionably was. It looked grossly abnormal. Unfortunately the tissue has been lost, so I have no histologic confirmation.

Dr. Holmes: I think you have explained why he did not get well under x-ray treatment, —because it was so widely distributed. It was hopeless at the start. The question is whether we ought to radiate cases of that type at all.



# THE *Secretary's* MESSAGE

## REPORT ON HEALTH NEEDS OF THE NATION

IT IS TIMELY TO OBSERVE THAT THE PRESIDENT'S COMMISSION ON THE HEALTH NEEDS OF THE NATION IS NOW EMBARKING ON ITS BIGGEST TASK: THAT OF DRAFTING AND COMPILING ITS FINAL REPORT AND RECOMMENDATIONS WHICH, CHAIRMAN PAUL B. MAGNUSON SAYS, WILL BE READY BETWEEN DECEMBER 1 AND 15.

AMA REPORTS THAT THE COMMISSION SET TO WORK ON THE REPORT AFTER HEARING TWO DAYS OF TESTIMONY, IN WASHINGTON, ON THE CONTROVERSIAL PROBLEM OF FINANCING MEDICAL CARE. A COMPREHENSIVE SUMMARY OF TESTIMONY PRESENTED AT THIS MEETING APPEARED IN THE WASHINGTON NEWS SECTION OF THE AMA JOURNAL, OCTOBER 18 WHICH YOU SHOULD READ.

THE FIRST REPORT TO BE GIVEN OUT BY THE COMMISSION WILL BE A 100-PAGE SUMMARY ON "THE STATE OF THE NATION'S HEALTH."

THIS SUMMARY WILL BE QUICKLY FOLLOWED BY PUBLICATION OF THE FOLLOWING DOCUMENTS: ABOUT 500 PAGES COVERING THIS NATION'S HEALTH STATUS, NEEDS AND RESOURCES; A STATISTICAL APPENDIX ON HEALTH STATUS, GIVING TABLES AND CHARTS; A STATISTICAL APPENDIX ON THE FINANCING OF HEALTH SERVICES, PERSONNEL, EDUCATION AND RESEARCH, AND EXCERPTS FROM REGIONAL PUBLIC HEARINGS.

MOST OF THE WRITING OF THE REPORT WILL BE DONE BY THE COMMISSION'S STAFF IN WASHINGTON. THE EDITING AND WHATEVER REWRITING IS NECESSARY WILL BE DONE BY H. B. VAN WESEP, WHO HAS BEEN HEAD OF THE OFFICE OF PUBLICATIONS OF THE ROCKEFELLER FOUNDATION IN NEW YORK FOR 25 YEARS. HE WILL GO OVER THE MATERIAL AS IT IS TURNED OUT BY THE COMMISSION'S STAFF AND PUT IT IN FINAL SHAPE FOR THE PRINTER.

# Editorial

ARIZONA MEDICINE

*Journal of*

ARIZONA MEDICAL ASSOCIATION, INC.

VOL. 9 NOVEMBER, 1952 NO. 11

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The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.

2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. (See MEDICAL WRITING by Morris Fishbein.)

3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.

4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.

5. Submit manuscript typewritten and double-spaced.

6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.

The Editor is always ready, willing, and happy to help in any way possible.

## EDITORIAL

## DIABETES DETECTION DRIVE

The week of November 16th to 22nd is National Diabetes Week. It is sponsored by the American Diabetes Association. Its aim is to make the community "diabetes conscious" and to inform the population of the problem of undiscovered diabetics in their midst.

The American Diabetes Association is an organization composed primarily of physicians who are deeply concerned with the diabetes problem. The association has promulgated a continuous, year-round Diabetes Detection Drive directly sponsored and conducted by local physicians through their medical societies.

Diabetes is a disease which presents urgent problems not only to the internists and general practitioners, upon whom the responsibility for the management devolves, but also to the specialists in many other fields. It may be correctly defined as the *disease of complications* since so many other ailments find the diabetic a particularly easy prey.

The magnitude of the problem is increased twofold by the fact that in addition to the approximate million known diabetics now under treatment, there is an estimated additional million in this country whose illness has not yet been discovered and, consequently, is not controlled.

It is essentially the physician's function and duty to discover the hidden diabetic, just as it is his task to supervise the treatment of those whose disease has been diagnosed.

As the Diabetes Detection Drive enters its fifth year, greater emphasis is being placed on the health education aspect of the program, as is evidenced by the fact that the function of the National Committee on Detection and Education has been broadened to include education as well as discovery.

——o——

## COMMITTEE ON SCIENTIFIC PROGRAM, 19th ANNUAL MEETING

The Nineteenth Annual Meeting of the American College of Chest Physicians will be held at the Hotel New Yorker, New York City, May 28-31, 1953.

Physicians who wish to present papers at the meeting should submit titles and abstracts to Dr. Arthur M. Olsen, Chairman, Committee on Scientific Program, American College of Chest Physicians, Mayo Clinic, Rochester, Minnesota.

## MAKE RESERVATIONS NOW

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On

## MEDICAL EDUCATION AND LICENSURE

**Monday and Tuesday, Feb. 9-10, 1953**

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The Annual Congress on Medical Education and Licensure is conducted under the auspices of the Council on Medical Education and Hospitals of the American Medical Association and the Federation of State Medical Boards of the United States.

In addition, the following open meeting will be held at the Palmer House immediately preceding the Annual Congress on Medical Education and Licensure:

**Sunday, February 8 — 9:00 a.m.-12:30 p.m.**
Open Meeting of the Advisory Board for Medical Specialties

**It is important to refer to the Annual Congress on Medical Education and Licensure when writing to the Palmer House for your reservation**

## IMPORTANT NOTICE TO ALL

### PUBLIC HEALTH SERVICE "RESERVISTS"

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It is absolutely essential and compulsory by law that all individuals—**Reservists,** "active" or "inactive", in Public Health Service, coming under the provisions of P.L. 779, Special Registration (Medical, Dental, Veterinarian and allied specialist categories), must REGISTER with their respective local Selective Service System Board. If you have not already done so — do so TODAY.




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# TOPICS OF *Current Medical* INTEREST

## RX, DX, AND DRS.

By GUILLERMO OSLER, M.D.

The new COMMITTEE ON TUBERCULOSIS, appointed by Governor Pyle, is a good result of a wise idea. . . . The State Tuberculosis and Health Association is responsible, and the committee seems to be a solid one. . . . The problem is changing, but still needs a solution, as we have said here several times. A fact-finding group should have been set up long ago, but no one would have believed them in past years. . . . Their findings, and a logical plan for a solution of the problem will not satisfy everyone, but the doctors, the rest-homes, the merchants, the Board of Health, the Legislature, and the Governor should all be more receptive than ever before.

---

**Did you know that you may have any one of nine specialty journals in place of the J.A.M.A.? . . . You may make that change, and have a new and adequate life, by getting your general medical news from ARIZONA MEDICINE, and TIME Magazine, and your specialty news from one of the several journals.**

---

One of the awards in the Mississippi Valley Medical Society contest went to Dr. Lawrence Craven of Glendale, Calif. He described the potential value of a drug in the PREVENTION OF CORONARY TROMBOSIS. The synthetic, non-exotic, ordinarily analgesic and antipyretic drug is ASPIRIN. . . . He believes that it works like dicumarol in preventing coagulation in the vessels —a fact demonstrated 10 years ago at the Wisconsin General Hospital. . . . His evidence is presumptive, since it depends on the absence of attacks during a 7 year period in 1,465 patients (considered to be likely candidates for coronaries) who were treated with 1 to 2 tablets of aspirin several times a day. . . . It has also seemed to prevent recurrences in a small series of coronaries. . . . He recommends the regular use of aspirin by those between 45 and 65, with certain characteristics, and who lead a sedentary life.

---

**The ACTION OF ANTIBIOTICS on bacteria has been thought to be an interruption of metabolism. . . . The International Congress of Biochemistry (Paris, July 1952) heard the theory that penicillin and broad spectrum antibiotics inhibit the bacterial synthesis of protein and nucleic acid. Individual differences exist, however. . . . Streptomycin produces an effect on the oxalacetate-pyruvate reaction, and the effect is lost when the bacteria develop SM resistance.**

---

The huge circulation of 'This Week' Magazine, a Sunday paper supplement, has been used to lay the ghost of a story about Eisenhower's health. . . . It is an article called "How Healthy Are They?", ostensibly about both candidates, as told by their physicians. Since no question has been raised about Adlai, one will get you five that it has to do with Ike's blood pressure. . . . A question-and-answer series very obviously includes information on his usual range of pressures (120 to 140 systolic), with occasional elevation to 156/96. Response to exercise was normal. . . . Both candidates are otherwise normal, tho they need to restrict their diet.

---

**One of the smaller drug manufacturers on the west coast speaks of the SULPHUR in its own compound in the following terms,—"a pearl of great price and the most desirable of medicines". . . . Paracelsus had little idea, when he wrote the words in 1530, that they would be used to sell a brand of CALSULFHYDRYL 400 years later.**

**This drug, incidentally, is the pet of Dr. Archie Cruthirds of Phoenix. He made TIME Mag. in October 1946 with the use of Hydrosulphosol for eye burns, made it again during October 1952. The present case is a child with corneal scars. The present drug has calcium added to the previous compound.**

---

The public prints have pretty well exhausted the story of the Tucson scientist who helped 'solve' a 1930 CHICAGO KIDNAPPING by the use of DENTAL CASTS. . . . Dr. Bertram Kraus, U. of A. anthropologist, selected the casts of a Mary McClelland from those of 39 women as the only ones which were compatible with those of the Moroney family. . . . The story was a natural, with crime, science, and mystery all confused. The confusion persists, since the McClelland woman's life history doesn't exactly fit the kidnapping dates.

---

**The late Alexander Woolcott used to end his stories with a punch-line, carefully saved for that spot. . . . This month's news on FLUORIDATION OF PUBLIC WATER-SUPPLIES comes from California. It says that two cities have just started to add fluorides. Antioch, a community of 11,000 people, has joined the modern parade. Antioch is in Eastern Contra Costa County. . . . Oh, yes. There was another city up north which has also started on the program. A place called San Francisco.**

---

Who would be silly enough to use VITAMIN B 12 only for pernicious anemia? It has recently been reported that,—1. Pain in 13 cases of TRIGEMINAL NEURALGIA was eliminated by 1,000

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## One Hundred Million Insurance In Force by 1962 Is Growth Goal

One hundred million of life insurance in force by 1962 is the goal of the carefully planned expansion program for Commercial Life Insurance, J. Carl Osborne, president of the Company announced recently, following a board of directors meeting which gave detailed consideration to the plan for Company progress.

A new type savings and profit-sharing contract is being offered selected clientele in severel western states as the first step in spearheading the drive for new business.

The new plan of insurance offered will be on a basis of the new policyholders participating in the profits of the Company on the basis of dividends paid on common stock. Each $150 of premium under the new policy will entitle its owner to not less than the cash earning of a $100 share of common stock.

The Company's progress in the past has been due largely to recommendations of new clients by old policyholders.

Commercial Life Insurance Company has had a steady and solid grow in assets and financial stability since it became a legal reserve company in 1947. It is rated "A" plus Excellent by Dunne's International Insurance Report and is rapidly becoming one of the leading financial institutions in the western states area.

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micrograms of B 12. 2. OSTEOARTHRITIS and OSTEOPOROSIS (33 cases) were improved by 30 to 900 micrograms of B 12, (tho testosterone is more commonly used in osteoporosis). 3. Four patients with chronic discoid LUPUS ERYTHEMATOSUS responded to as little as 15 micrograms of B 12. (One could add a No. 4, since the compound is used to produce growth in animals). . . . Small numbers all, but maybe they are indications of indications.

---

**Merck reports a trade preparation Mephyton, an EMULSION OF VITAMIN $K_1$. The drug is used to correct a prolonged prothrombin time, sometimes with hemorrhage, following use of Dicumarol. It is not effective after use of heparin. . . . The ordinary Vit. K preparations do not act rapidly enough. Vit $K_1$ is usually not available, but the emulsion can be given IV. The action is said to begin in 15 minutes, with correction of the defect in 3 to 6 hours. . . . This rapid effect allows surgery to be done with less delay, and no transfusions, after previous use of dicumarol.**

---

The A.M.A. feels that the International Labor Organization is a huge mechanism for promoting SOCIALIZED MEDICINE. If the U. S. Senate should ratify the newest ILO Convention (Treaty) on Minimum Standards of Social Security, we would be stuck with socialized medicine, and from the outside.

---

**Dr. C. Thomas Read of Phoenix is the author of a timely paper in the Journal of Thoracic Surgery for September 1952. (He read it at the Dallas meeting of thoracic surgeons in May of this year). . . . The title is "The Use of SK-SD (Varidase) in the Management of Early Postoperative Partial Pulmonary Resections". . . . You may be able to beg a reprint for the details, but the special angles are the lytic effects of 'Varidase' and the words 'early' and 'partial'.**

---

Terramycin is widely used. It has a broad spectrum, and it is claimed to be helpful against almost everything. We have found one usage where it seems to be on the less popular side. . . . One might expect, in the problem of CONCEPTION VERSUS CONTRACEPTION. that for some reason the drug would turn out to be the ideal prophylactic. Not so. It seems to be an aid to those childless women with poor or absent SPERMIGRATION (a term invented by some medical Walter Winchell). . . . The action may occur by the healing of an endocervicitis. . . . Ten pregnancies occurred within 3 months in a group of 35 infertile women (with normal husbands) after receiving 3 to 6 gm. of Terramycin on the 6th, 5th, and 4th day before ovulation. They had had an average barren period of 4.5 years apiece.

---

**LIFE Magazine sees the rare side of surgery. A July issue tells of a transplant operation done at the Valley Forge Army Hospital. . . . A soldier in the Korean war had his thumb shot off. The forefinger was moved to its place, and with a fairly good functional result in motion, grasping, etc.**

---

The impact of Dr. Hans Selye on the subject of ADAPTATION is secure. is volume 'Stress' brought the adrenals and nervous system together, and to the public attention. . . . Now he intends to reinforce the impact, and to 'red up' the disorder every year. He has published (from Montreal) an 'Annual Report on Stress'. The new volume includes his impressions of more than 3,000 articles!

---

**Louis Dublin, chief statistician for the Metropolitan Life Insurance Co., has really pulled the rug out from under THE OBESE. . . . He calls them Public Health Problems No. 1, but stresses the fact that they can be cured, right now. . . . Between 20 and 64 years of age, the death rate of obese males is 50% higher than for the non-obese. Fat women have a 47% higher mortality than normals. The rate is generally in proportion to tonnage. . . . There are only two safe approaches to reducing,—appetite and amphetamine. . . . (This unsympathetic abstract, naturally, is written by a person who weighs just the right amount).**

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# *Migraine In Children*

"Migraine may appear during the first years of life. The presence of subjective signs, such as headache and flimmer scotoma, is often difficult to determine in young children. The true nature of the symptoms frequently remains obscure for years."

Vahlquist, B. and Hackzell, G.: Acta Paediatrica *38*: 622 (1949).

| NO. OF CASES | SEX | AGE AT ONSET | CYCLIC VOMITING | DURATION OF ATTACK | INTENSITY |
|---|---|---|---|---|---|
| 31 | 8 ♀ 23 ♂ | 3 yrs. (mean) | 3 out of 31 | 2½ hrs. | severe in all cases |

TABLE CONT'D

| NO. OF CASES | UNILATERAL HEADACHE | NAUSEA | FLIMMER SCOTOMA | VERTIGO | HEREDITY |
|---|---|---|---|---|---|
| 31 | 18 out of 31 | 31 out of 31 | 12 out of 31 | 6 out of 31 | 20 out of 31 |

(reference given above)

In a study of 400 adult migraine patients, it was revealed that 34% had suffered attacks before the age of 15.* These investigators concluded that childhood migraine was a much greater clinical problem than was previously believed and that psychodynamic mechanisms played an important part in the disease.

These criteria are useful in diagnosis:

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*Katz, J., Friedman, A.P., and Gisolfi, A.: New York State J. Med. *50*: 2269 (Oct.) 1950.

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## NEW VITAL STATISTICS LAW GOES INTO EFFECT

As final proof of the rising cost of living, the price for birth certificates has gone up. Like the penny postcard, the 50 cent birth certificate has become a thing of the past.

An increase in fees for certified copies went into effect October 1. The new charge is one dollar for each certified record issued by the Division of Vital Statistics. The new fee applies to both birth and death certificates.

Such an increase has long been deemed necessary, said Dr. Clarence G. Salsbury, State Director of Public Health, to meet the cost to the State for preparation of certified copies. The change in fee from fifty cents to one dollar was authorized last spring by the State Legislature through passage of a new Vital Statistics Act. The new law contains many revisions that bring Arizona into conformity with modern practices and standards of the National Office of Vital Statistics.

A new "short form" birth certificate is now being issued to provide concise information necessary to establish proof of age and citizenship. This abbreviated birth record carries the name of the individual, sex, and date and place of birth. Copies of the complete original certificate, which is kept in bound files, may be obtained by special request.

An entirely new birth certificate may be filed for a child whose parents marry subsequent to his birth, whose parentage is determined by court action, or who is legally adopted. Under the new law, the clerk of the Superior Court will notify the Division of Vital Statistics of each adoption. Thus each adopted child is automatically assured of a birth certificate in his new legal name.

The new law also provides for certificates for foundlings based on information furnished by the person or agency assuming custody of the child. The person assuming custody must report to the Division of Vital Statistics, estimating the date of birth. The place where the child is found is listed as the birthplace. Later, if the child is adopted, a new certificate is filed in the name of the adopting parents.

Proof of age and citizenship is commonly required of every individual from the time he enters school until he reaches the age of retirement. National officials have estimated that almost half of the nation's 88,000,000 native-born adults of 20 years and over today have no official records of birth.

For this reason, the demand for "delayed" certificates of birth is increasing. To meet this need and to assure the validity of such certificates, the Division of Vital Statistics has been given definite legal authority to require evidence as proof of age and birthplace. Such proof is required for all persons whose births have not been registered within seven years after date of birth. Since recording delayed certificates requires detailed searches and review of documentary evidence, the Legislature established a fee of four dollars which must be paid before a delayed certificate can be filed.

From the standpoint of public health and medical research, the most significant revision under the new law is a provision for a single fetal death (stillbirth) certificate. In the past, stillbirths have been registered first as births and then as deaths. This unnecessary duplication was both time-consuming and confusing. The old certificates did not contain desired information as to contributing causes of stillbirth. The new fetal death certificate is designed to further scientific research by providing pertinent data on causes of death. Loss of life during the prenatal stage is one of our most serious health problems. Only through a better knowledge of the causes of stillbirth can such a high loss of infant life be prevented.

———o———

## A.M.A. SECRETARY'S LETTER ANNUAL POSTGRADUATE CONFERENCE IN OPHTHALMOLOGY

"The Stanford University School of Medicine will offer the annual postgraduate conference in Clinical Ophthalmology from March 23 through 27, 1953. The program this year will be devoted to Ophthalmic Surgery. Registration will be open to physicians who limit their practice to the treatment of diseases of the eye or eye, ear, nose and throat. In order to allow free discussion by members of the conference, registration will be limited to thirty physicians.

"Instructors will be Dr. A. Edward Maumenee, Dr. Dohrmann K. Pischel, Dr. Jerome W. Bettman, Dr. Max Fine, Dr. Earle H. McBain, and Dr. Arthur J. Jampolsky.

"Programs and further information may be obtained from the Office of the Dean, Stanford University School of Medicine, 2398 Sacramento Street, San Francisco, California.




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## DOCTOR DRAFT LAW EXTENSION

The Washington Office of the American Medical Association reports that Defense Department officials, with the assistance of representatives from other federal departments and professional associations, have started work on problems of the physician-dentist-veterinarian draft, preparatory to asking for an extension and amendment of Public Law 779, scheduled to expire next June 30.

The Defense Department's Armed Forces Medical Policy Council sponsored the first discussion meeting, attended by spokesmen for dentists, veterinarians, hospitals, and medical schools, as well as the American Medical Association. Represented also were the Armed Forces, Defense Department's manpower division, Selective Service and the Rusk committee of which our Arizona Advisory Committee to the Selective Service System under the chairmanship of Joseph Madison Greer, M.D. is a part.

At the first meeting, held in the Pentagon, a Defense Department spokesman gave this outline of the problem which will be of interest to many of us:

1. Medical Priorities I and II will be exhausted shortly, and future requirements will have to be met from Priorities III and IV. Questionnaires are now being sent to a number of physicians in Priority III.
2. There are not enough men in Priority III to meet military requirements for long; unless the younger men in Priority IV are made available by a change in the law, the services will be offered too many of colonel and major age and experience, not enough for the captain and lieutenant commissions. Dislocating physicians of 15 or 20 years experience from their civilian practice will create additional problems.
3. The age and experience level of Priority IV men make many of them more acceptable, but it is possible that a high percentage already have had two or more years of active military duty; besides, these men cannot be called until Priority III has been used up.
4. The professional manpower shortage will continue until 1958, when enough non-veterans, currently deferred from the regular draft to complete their medical training, will be available to meet most military requirements.

No conclusions were reached at the first meeting, and association representatives were not asked to pledge support for an extension of P.L. 779 at this time.

———o———

## KPHO-TV RADIO PROGRAM

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## AMERICAN ASSOCIATION OF PUBLIC HEALTH PHYSICIANS

A movement has been underway for quite some time to form an American Association of Public Health Physicians.

The movement, endorsed and approved by the A.M.A. Board of Trustees several months ago, was promoted by the following committee: Drs. Bruce Underwood, Louisville, chairman; Wilson T. Sowder, Jacksonville, Fla.; Grady F. Mathews, Oklahoma City; R. C. Williams, Atlanta; S. J. Phillips, New Orleans, and Frank E. Wilson, Washington.

The plan, which already has the support of many state and local health physicians on an informal individual basis, will be offered for consideration of the executive committee of the American Public Health Association when it meets in Cleveland late this month. The committee hopes also that it will have the endorsement and active sponsorship of the Association of State and Territorial Health Officers.

A statement, issued recently by the committee, follows in part:

"The general purpose is to provide an Association of American Public Health Physicians to which the Public Health Physicians in Local and State and Territorial Health Departments may belong. We feel there is a need for an American Association of Public Health Physicians. At the present time, there is no single agency or group which can officially speak for the Public Health Physicians of this country. The American Medical Association primarily represents the practitioners of medicine; The American Dental Association represents the dentists; the American Hospital Association represents the hospitals; the American Psychiatric Association represents the psychiatrists, and there are many other associations which represent various health and medical professions; but, there is none that adequately represents the Public Health Physicians.

"The American Public Health Association has a section for health officers, but the Association includes a majority of non-medical persons and, for this and other reasons, the association cannot, by its very nature speak adequately for the Doctors of Medicine engaged in preventive medicine and public health.

"The Association of State and Territorial Health Officers does not include district or local Public Health Physicians. Neither can the Conference of State and Provincial Health Authorities of North America, for the same reasons, represent all physicians engaged in preventive medicine and public health.

"All Public Health Physicians in this country should belong to and actively participate in affairs of the American Medical Association. Likewise they should belong to and actively participate in the affairs of the American Public Health Association. But, in addition, the Public Health Physicians of this country need an association limited to Doctors of Medicine in the field of preventive medicine and public health that can adequately represent their views nationally. The purpose of the association will be to foster and maintain leadership consistent with the ethical standards and fraternal desires of these medical administrators."

A. M. A. Secretary's Letter

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## TV SHOWS HIGHLIGHT CLINICAL SESSION

For the second time in history, absorbing on-the-scene reports of medical progress presented at an American Medical Association meeting will be relayed coast-to-coast on television.

Two half-hour programs entitled "The March of Medicine" will be telecast from Denver over the National Broadcasting Company network during the week of the Clinical Session, Dec. 2-5.

It is expected that an audience of more than 10 million persons will view presentations of new surgical and clinical demonstrations, special scientific exhibits, and other medical features of interest to the general public.

The programs will be presented at 7:30 p.m. (MST) on Tuesday, Dec. 2, and at 8 p.m. (MST) on Thursday, Dec. 4. Local newspapers should be consulted for time and television channel in other areas.

The telecasts are being sponsored by Smith, Kline and French, Philadelphia pharmaceutical firm, in cooperation with the American Medical Association.

——o——

## THE M·D.'s NOTEBOOK

The Public Relations Board under the chairmanship of Howard C. Lawrence, M. D., recently completed its first 13-week television and radio series. The program entitled: "THE M. D.'s NOTEBOOK" is a presentation by Arizona's own medical doctors on selected medical subjects in the interest of "good health" for all peoples of this state. Heard weekly over station KPHO-TV (Phoenix) Tuesday evenings between 9:45 and 10:00 o'clock and simulcast for rebroadcast over station KPHO-RADIO (Phoenix) Thursday evenings between 8:45 and 9:00 o'clock, this public relations service appears to be well received and is gaining in popularity. Your suggestions or constructive criticism will be welcome. If you would like to participate let the chairman know your wishes. This Board is grateful to all those who have participated and made this endeavor possible and especially appreciates the contribution by Associated Dairy Products (Webster), sponsor.

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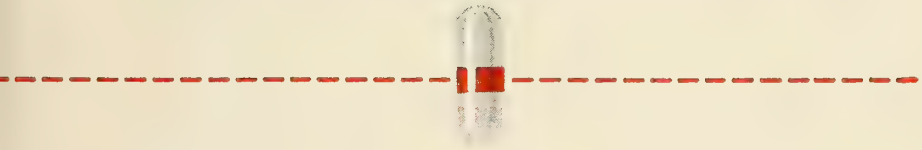
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1. Michael, N.: Ohio State M. J. *48*:42, 1952.
2. Carter, S., in Conn, H. F.: Current Therapy 1952, Philadelphia, W. B. Saunders Company, p. 610.
3. Lennox, W. G., in Cecil, R. L., and Loeb, R. F.: A Textbook of Medicine, ed. 8, Philadelphia, W. B. Saunders Company, 1951, p. 1379.
4. Lennox, W. G., in Piersol, G. M., and Bortz, E. L.: The Cyclopedia of Medicine, Philadelphia, F. A. Davis Company, 1951, Vol. V, p. 215.
5. Christian, H. A.. The Principles and Practice of Medicine, ed. 16, New York, D. Appleton-Century Company, 1947, p. 1370.



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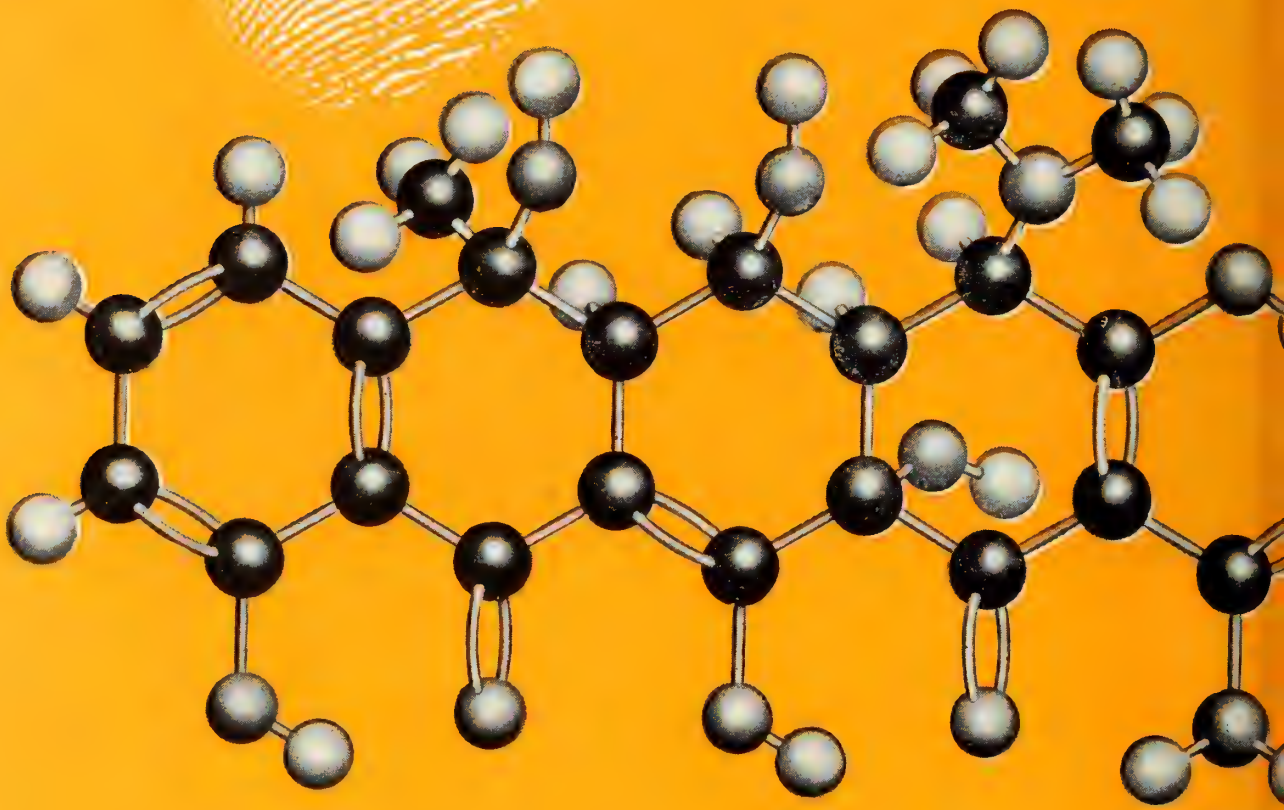
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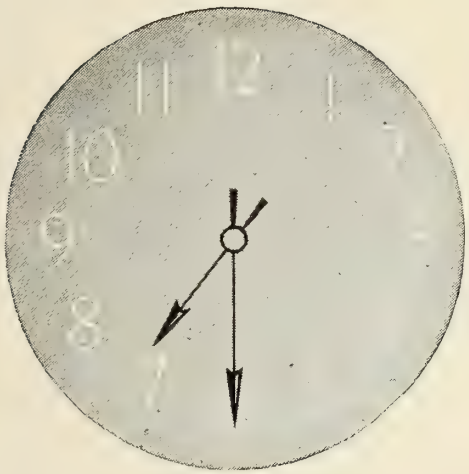


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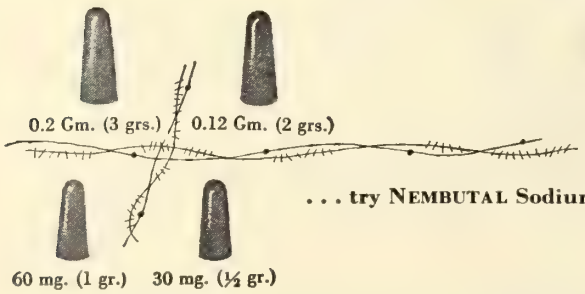
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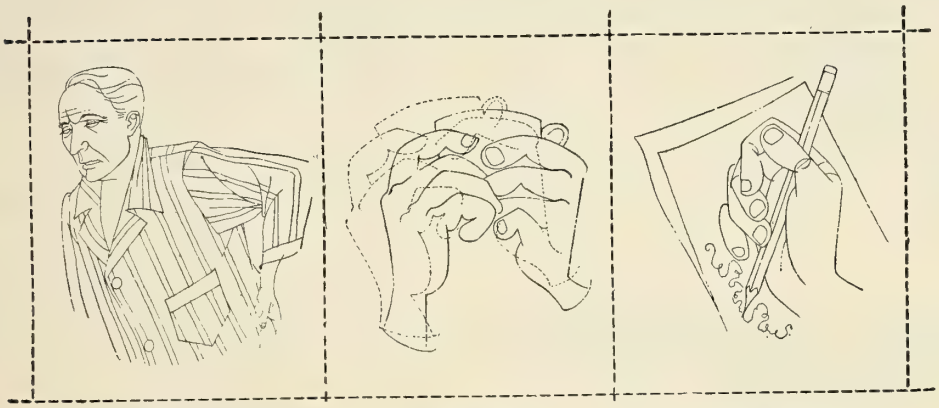
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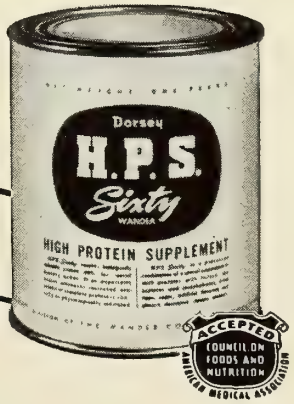
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ARIZONA MEDICINE
Journal of Arizona Medical Association

VOL. 9, NO. 12 DECEMBER, 1952

# Original ARTICLES

## MEGACOLON

James T. Emert, M.D.
Phoenix, Arizona

Megacolon, according to Hirschsprung, is a condition of congenital high-grade dilataion of the colon with thickening of all its tunics, especially the tunica muscularis, with the retention of large quantities of fecal matter To this should be added the definition of Claude Dixon who describes the condition as a dilatation and hypertrophy of the colon in the absence of a gross obstructing lesion. This can be discounted many cases mistakenly classed in an already complicated symptom complex which are due to such definitely obstructing lesions as tumors, bands, strictures, adhesions, stenosis or imperforate anus.

Fortunately the condition is rare, occuring once in about every 10,000 hospital admissions and one in every 11,000 autopsies. The earliest was found in a seven month foetus. Males predominate five to one. Genetically there are seven reported instances of it occuring more than once in a family of which one family had four sons with megacolon. Symptoms are dilation of the colon in whole or in part, visible peristalsis, obstipation, emaciation, weakness, atonic skeletal musculature, flared ribs and retardation of secondary sex characteristics in those who reach puberty. The almost obstructing constipation seldom of itself causes vomiting though these patients sometimes go three to four months without a bowel movement.

The etiology is obscure as reports of associated conditions, will show. These include many cases of myxedema, tumors of the hypophysis, 30% of all cases of acromegaly, $B_1$ avitaminosis and malnutrition (however this may be a result rather than a cause), post-encephalitis, infantilism, mongolism, hydrocephalus and Pott's disease. Beyond these the condition is not infrequently associated with megaesophagus and/or a dilated atonic bladder but in the majority of cases the infant or patient is normal except for the singular colon abnormality.

The major efforts in the earlier literature were directed toward symptomatic relief except in surgical emergencies; where obstruction due to volvulus or impaction occurred, peritonitis followed perforation from gangrene or ulceration, or pulmonary or cardiac embarrassment from the excessive distention demanded deflation by cecostomy or colostomy. In 1930 the literature was reviewed for cases of resection which were in the main emergency measures for volvulus and only 74 were found. In most cases a Mickulicz double-barrelled colostomy was performed and the mortality was 24.5%.

A great impetus to the study of classification, etiology and therapy was awakened in 1927 when Royle and Wade of Australia published a report of a cure of obstinate obstipation when doing lumbar sympathectomy for spastic paralysis of the lower extremities. This opened up a new field of therapy for this dread condition as well as pointing toward the possible cause. Numerous theories arose, the predominent being that there is in megacolon an imbalance of the nerve supply to the bowel with the sympathetic, which contracts the anal sphincter, overbalancing the parasympathetics which produce contraction of the bowel muscle. Many operations were

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devised which had as their purpose to remove emperically this imbalance mainly by interrupting the sympathetic fibers to the affected portion of the colon. More of this will be discussed under therapy.

Pathologically about 34% have changes only in the sigmoid colon. Sometimes the right colon alone is affected and any portion or all the colon including the rectum may be involved. The wall is like thick wet leather, haustra are absent, the mesentery is elongated as well as the colon itself especially in the sigmoid predisposing to volvulus. There is an increase in fibrous tissue throughout, chronic inflammatory reaction, chronic lymph stasis with enlarged mesenteric nodes in some cases. The muscle layers are hypertrophied until the process progresses to a point where the gut wall becomes atonic and muscle is replaced by fibrous tissue. Many report an agenesis or fibrous replacement of Auerbach's plexus of the intrinsic myenteric nerves and ganglia, some of whom base the rationale of their therapy on this finding, but it is not a consistent pathological change, is not always in the anticipated portion of the colon if found and certain results seem to deny this as the etiological basis. So there is a complex varying problem which some authors consider functional rather than organic and others feel should be considered as a syndrome rather than a disease.

Case 1. F. C. No. 95344 Lincoln Hospital, N. Y. C.

This patient, a 21 year old colored female, was admitted as a surgical emergency on the evening of Dec. 2, 1939. Her chief complaint was pain in the abdomen for 12 hours with distention. The pain was mainly in the left lower quadrant and she had been vomiting fecal material for several hours. There was no return from enemata except some flatus. W.B.C. was 16,200 per cm. Polys 90% urine showed a trace albumin, Hb. 8.5 grams.

Past history revealed that she had been constipated from birth with frequent bouts of obstipation relieved by enemata and colonic irrigations. Because of abdominal distention and the necessity of missing school for days in order to relieve these symptoms there was somewhat of an emotional problem because her schoolmates believed that she would become pregnant and have abortions performed. There was no previous history of serious illness or operations.

On examination the only positive signs were a markedly distended abdomen with the main protuberance on the left side extending from the pelvis to the rib cage, visible peristalsis, dullness over the mass and mild tenderness in the left lower quadrant with no rebound tenderness.

An immediate operation was ordered and on opening the peritoneum through a lower left rectus incision a shiny thick rubbery mass was revealed which had the appearance of the wall of a large ovarian cyst. After enlarging the incision it was found that the mass extended from the pelvis to the fourth rib anteriorly displacing the diaphragm upward. On delivering the weighty mass outside the belly it was discovered that it was a large hypertrophied sigmoid loop with a long veil of mesentery which was obstructed just above the peritoneal reflection in the pelvis and also at a point about midway in the descending colon. There was no radial torsion but each end of the distended loop had twisted on itself being possible because of the long mesosigmoid. An attempt was made to deflate it by having an assistant insert a rectal tube. When this was unsuccessful aspiration was attempted through the gut wall. However, the contents were mainly inspissated fecal matter and the problem of immediate resection then arose. Incidently, the remainder of the colon was normal in appearance and tone; the patient had vomited whatever fecal contents were above the proximal obstruction.

A Mikulicz double-barrel colostomy was attempted but after the clamps were placed beyond each obstruction there was not enough normal bowel to form barrels. Because of the weight of the mass it was immediately excised and found to weigh a little over twenty-three pounds on a rough scale.

The bowel was 16 cm. in greatest diameter and had the appearance and rubbery feel of an inflated inner tube. Pathological report revealed diffuse fibrosis of the peritoneal covering. The wall was 4 mm. thick. Microscopically there was compression atrophy of the musculature, moderate thickening of serosal arteries with dilatation of veins. Two large nerve trunks showed no significant changes. The mucosa was intact and atrophic.

Before closing the incision a mushroom catheter type intra-peritoneal cecostomy was performed bring the tube out a small right McBurney incision. The clamps were left on each end of the gut. A tight binder was applied to

prevent possible shock because of the large mass removed from the abdominal cavity. Dr. Carnes Weeks of Bellevue had a similar case which was solved by suspending the mass from a Balkan frame until the peritoneum was sealed off.

The clamps were removed on the fifth day at which time she had peristalsis. There was never any shock and her temperature was never over 100.6. There were no antibiotics then.

At five weeks an end-to-end anastomosis was performed when attempts to make two barrels failed because of lack of intestine and it was necessary to make the anastomosis directly over the left iliac vessels.

All wounds closed and normal bowel movements occurred at nine weeks.

At twelve weeks she returned with a small fecal fistula at point of anastomosis. X-ray at this time failed to show obstruction in any part of the colon. There was post-op narrowing at the site of sigmoid. No dilatation was seen.

A Miller-Abbott tube was inserted down to the cecum so that she could be fed normally. The fecal fistula closed and she was discharged on the tenth day. A letter from the patient written 45 months after operation stated she was perfectly well, having one to two bowel movements per day without laxative or enema and that she had had a normal pregnancy and delivery without bowel disturbance two years after operation which was certainly a fair test of an anastomosis at the level of the iliac vessels and indicated a lack of further proximal dilatation of the bowel.

Case 2. M. B. 1 No. 151,719 Lincoln Hospital N. Y. C. Male, Age 59.

Admitted 3-29-46 with a history of severe abdominal cramps after eating one week ago, relieved by vomiting and bowel movement. For the last 30 hours had abdominal cramps and inability to move bowels. Three years previously he had an obstruction caused by "enlarged intestine" operatively relieved at Metropolitan hospital. On investigation this was discovered to have been a volvulus of the sigmoid which was deflated after opening the abdomen.

Previous history revealed only a right inguinal herniorrhaphy 20 years ago.

At this admission significant findings were a markedly distended left lower abdomen and visible peristalsis. Temp. 101, Pulse 96. A Miller-Abbott tube was passed. X-ray revealed marked



gas distention of sigmoid. Another surgeon repeated a deflation operation through a left lower rectus incision. This case was presented at surgical conference the following week and the question was brought up of the next step to be taken when he should again obstruct. This was answered on his thirteenth hospital day at which time I was on service and was called because he had eviscerated. The pathology found was a volulus of the sigmoid with double obstruction of it because it had rotated. Furthermore he had a small bowel obstruction of a loop of ileum which was lodged in the pelvis having migrated to the left of the sigmoid loop at the base of the mesentery and then became kinked in the pelvis. The latter was easily relieved and it was decided to do a Mikulicz resection on the sigmoid loop to effect a permanent cure if the patient could be kept alive. Technically this procedure was much easier than the previous case because it was simple to form two barrels of good bowel and also the main contents of the sigmoid were fluid and gas which were readily aspirated after closing the peritoneum around the two barrels. In this case the sigmoid loop was not removed for two days leaving the intestinal clamps on to test blood supply and allowing the peritoneum to seal itself. A mushroom catheter intraperitoneal

cecostomy was also done in this case. The bowel segment was removed by electric cautery without pain, on the ward.

The specimen measured 24 inches in length and 5 inches in width with reddish blue surface containing white plaques. The mucosa was normal. On section there was a lipomatous gelatinous infiltration between serosal and muscular layers. No unusual microscopic changes in normal architecture of bowel were present. Some chronic inflammatory cells were found in the mucous and serous layers with thickening of the submucous layer.

There was a bleeder in the lower segment which had to be caught after removing the clamp, otherwise convalescence and closure were normal except for a peri-rectal abscess which developed and was cured by drainage.

Fifty-six months after operation the man was asymptomatic with no recurrent distention and regular bowel movements occurred without help and he was able to carry on a job as a garageman.

Treatment begins by ruling out a true obstruction and correcting any co-existing disease or glandular imbalance.

Medical treatment which may suffice in mild cases consists of frequent enemata, mineral oil, diet, abdominal massage, laxatives at intervals and specific drugs. Mecholyl which stimulates the parasympathetics is one of the most useful to produce defecation and yet, to show how little we understand the underlying mechanism of the disease, Syntropan which has an atropine-like action paradoxically will work just as well. Medical therapy can sometimes control the symptoms but is an arduous task and is not curative.

During the thirties great enthusiasm was shown for various sympathetic blocks and many encouraging results reported. The criteria for sympathectomy are: a) failure of medical therapy b) no evidence of tendency to volvulus and c) a good response of evacuation when spinal anaesthesia is given.

Sympathetic block does not allow a bowel which has hypertrophied to return to normal, and not only does it remove the sensory pain warnings of volvulus, impaction or perforation, but about 1937 reports began to come out that these were not infrequent sequelae of the condition early and late after sympathectomy. It was found that medical treatment with or without sympathectomy had a death rate of 58% on the average in a resume of reports. Resection of the superior hypogastric plexus produces sterility in the male. Removal of the second and third sympathetic ganglion causes vasomotor paralysis in both lower extremities. One author feels that sympathectomy should be limited to true Hirscthsprung's disease when there is only mild generalized dilatation.

Surgical treatment varies greatly and is indicated as a last resort in failure of any of the above. Segmental resection is indicated as a primary treatment in cases of limited dilatation such as dolichocolon (functional obstruction from extreme redunduancy) which tends to produce volvulus. It has been reported that after segmental resection other portions of the colon proximal to the lesion become dilated but Dixon reports 41 segmental resections with no recurrences and 25 of the cases have had a complete relief of symptoms. Cattell and others prefer a subtotal colectomy with ileo-sigmoidostomy. Most all of them favor a stage procedure either of the Divine or Mickulicz double-barrel type for safety from contamination, the ease of mobilizating a bowel with long mesentary and to allow the shrinkage of any dilated bowel which is not pathological but dilated or edematous from back pressure. Swenson reports an abdomino-perineal type operation for segmental megacolon of the recto-sigmoid preserving the anal sphincter by freeing the sigmoid and rectum down to the anus then drawing the freed bowel through the sphincter. He argues that rectal achalasia, the absence of normal propulusive waves in rectum and rectosigmoid constitute a physiological defect that results in chronic obstruction, is due to dysfunction or absence of the myenteric plexus. On a similar theory Hiatt does a Kraske-type operation from below after removing the coccyx. Both report several good results. Arguing against the validity of this theory Ritter reports three cases with rectal achalasia in which he removed the dilated portion and the distal dysfunctioning segment return to normal character.

In attempting to discuss this complex as briefly as possible, even discounting the cases due to true obstructive lesions, one can see the variety of problems and the many approaches to it indicate there is still disagreement as to its etiology even if there be one cause. As in all phases of abdominal surgery the mortality now has been lowered mainly because of better under-

standing of physiology and antibiotics. There has been an attempt to show that there is now a better understanding of how to treat this disease than twenty-five years ago, and that the outlook can be more favorable in a condition which, though grave, is fortunately rare.


BIBLIOGRAPHY

1. Stone, H. B.: Megarectum and Megasigmoid: Annal. Surg. 109:791.
2. Rankin, F. W. and Learmouth, J. R.: Amer. Jour. Surg. Vol, XCII :710.
3. Weeks, Carnes: Volvulus of a Sigmoid Megacolon: Amer. Jour. Surg., Vol. XCIV 1050.
4. Browder, J. and Jett, J. C.: Surgical Treatment of Congenital Megacolon: Brooklyn Hosp. Jour. 1939, 1:5.
5. Hurst, A. F.: Anal Achalasia and Megacolon: Guys Hosp. Rep. London, 1934–84:317.
6. Trumble, H. C.: Surgical Treatment of Constipation: Med. Jour. of Austral. Vol. II, pp. 405.
7. Robertson, D. E.: Treatment of Megacolon by Sympathectomy. Amer. Jour. Surg. Vol. XCIV, Oct. 31.
8. Adamson, W. A. D. and Ian Aird: Megacolon—Evidence in Favor of a Neurogenic Origin. Brit. Jour. Surg. Vol. XX, 78:220.
9. Clarke, T. W. and Miller, F. M.: Hirschsprung's Disease Treated by Lumbar Sympathectomy. Arch. Ped. Vol. XLVIII :553.
10. Louis G. Hermann: Management of Megacolon—Surg. Clin. N. A., 26:1170.
11. White && Smithwick: The Autonomic Nervous System. 2nd Ed. N. Y. MacMillan Co., 1941.
12. Scott, W. J. M. & Morton, J. J.: Sympathetic Inhibition
13. Dixon, C. F.: The Management of Megacolon: Tr. West Surg. Assoc. 48:433, 1938.
14. Cottell, R. B. & Colcock, B. P.: Congenital Megacolon: Surg. Clin. N. A. 26:644.
15. Dixon, C. F. and Judd, D. B.: Surgical Treatment of Congenital Megacolon. Surg. Clin. N. A. 28:889.
16. Bancroft & Made: Surgical Treatment: J. B. Lippincott Co. 1947.
17. Neff, F. C. and Hayne, R. S.: Clinical Pediatrics: D. Appleton Co., 1927.
18. Alvarez, W. C., Bargen J. A. and Brown P. W.: Megacolon: Oxford Medicine, 1936:284.
19. Smitley, H. G. and Kredel, F. E.: Localized Acquired Megacolon Treated by Sympathectomy: Surgery 22:259.
20. Swenson, O. and Bill, A. H.: Resection of Rectum and Rectosigmoid with Preservation of Sphincter for Benign Spastic Lesion Producing Megacolon: Surgery 24:212.
21. Ravick, M. M.: Hirschsprung's Disease: Surg. Clin. N. A. 1949:1547.
22. Bodian, M. & Cartes, C. O.: Hirschsprung's Disease: Lancet 1951, Vol. 1, No. VI, 302.
23. Grimson, K. S., Vandergrift, H. N. & Dratz, H. M.: Management and Prognosis of Megacolon: Am. Jour. Dis. Child. 68:102.
24. Grimson, K. S., Vandergrift, H. N. & Dratz, H. M.: Surgery in Obstinate Megacolon: S.G.O. 80:164.
25. Rankin, Bargen and Buie: Colon, Rectum and Anus. 1932.
26. Schneider, H. C.: Relation of Functional to Organic Diseases of Anus, Rectum and Sigmoid Colon: Amer. Jour. Surg. 75:296.
27. Bosworth, B. M., Stern, H. D. and Lisa, J. R.: Modern Management of Megacolon: Amer. Jour. Surg. 75:808.
28. Alvarez, W. C.: A Simple Explanation of Cardiospasm and Hirschsprung's Disease: Gastroent. 13:422.
29. Merle Scott, W. J. & Seranati, Q. T.: Megacolon; Mechanism and Choice of Treatment. Surgery 20:603.
30. Wade, R. R. & Royle, N. D.: Operative Treatment of Hirschsprung's Disease—New Method: M. J. Austral. Vol. 1; pp. 137, 1927.
31. Jenkins, J. A.: Hirschsprung's Disease: Austral. New Zeal. J. Surg. 1948 :17:189.
32. Quenu, Jean: De la colectomie pour megacolon: Mem. Arad. Chir., Par. 1948, 74:195.
33. Fawcett, B.: The Relation of the Factor of Growth to the Pathogenesis of Megacolon, Megaileum and Megaduodenum: Surg. 29:491.
34. Hiatt, R. B.: The Pathologic Physiology of Congenital Megacolon: Amer. Surg. 133:313.
35. Hiatt, R. B.: Surgical Treatment of Hirschsprung's Disease: Amer. Surg. 133:321.
36. Whitehouse, F. W., Bargen, J. A., Dixon, C. F.: Congenital Megacolon: Favorable End Results of Treatment by Resection: Gastroent. Vol. 1: 922.
37. Swenson, W.: Rhinelander, H. F. and Diamond, I.: Hirschsprung's Disease—A New Concept of the Etiology: New Eng. Jour. Med. Vol. 241 :551.
38. Swenson, O., Rhinelander, H. F. and Diamond, I.: New Concepts of the Etiology, Diagnosis and Treatment of Congenital Megacolon: Pediatrics, Vol. 4, :201.
40. Rigler, L. G. & Lipschultz, O.: Roentgenologic Findings in Acute Obstruction of the Colon: Radiology 35: 534.
41. Rigler, L. G.: Roentgen Diagnosis of Acute Abdominal Conditions, A Review: Univ. of Minnesota.
of the Large Intestine In Hirschsprung's Disease. J. Clin. Invest. 9:247.


# CARCINOMA OF THE PANCREAS


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Morgagni described cancer of the pancreas some two hundred years ago, but until recently it has been considered a hopeless disease. The first attempt at radical surgical treatment was made by Codivilla in 1898. The patient died, the surgeon's colleagues were not stimulated, and another 14 years elapsed. In 1912 Kausch did a two stage pancreatico-duodenectomy for carcinoma of the ampulla. This patient died of ascending cholangitis nine months later. For the next twenty-three years palliative procedures were performed to relieve jaundice with its associated symptoms. At first the gall bladder was anastomosed to the stomach, later the duodenum and jejunum were found to be more satisfactory. Occasional cases were reported of transduodenal excisions of small ampullary growths, but it remained for Whipple and his associates to put radical pancreatic surgery on the map in 1935. The two stage operation soon became a standardized procedure. The first stage consisted of cholecystoenterostomy for relief of jaundice. In 1940 when it was possible to prepare jaundiced patients for surgery by the administration of vitamin K, the one stage procedure came into vogue (17).

Most tumors of the pancreas are malignant. Carcinoma of this organ is not uncommon. This tumor, which arises from the epithelium of the ducts, accounts for about 2 per cent of all cancers, and like most cancers finds its highest incidence in the 50-70 age group. It is twice as common in males, and in the older literature is alleged to occur three times oftener in the head than in the body and tail. More recent work indicates that the incidence of the two different types is about equal. The much greater difficulty of diagnosing the latter type probably accounts for the apparent higher incidence of the former. The duration of symptoms is usually short. In one author's collection of 759

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cases from the literature, the average duration of symptoms was 7.1 months, the longest lasting 8 years(1).

Silver and Lubliner in their analysis of 104 cases of carcinoma of the pancreas have made some interesting observations on the signs and symptoms of this disease. They point out that rapid weight loss, for some obscure reason, is characteristic of carcinoma of the pancreas. One would naturally expect such weight loss with obstruction of the pancreatic and biliary ducts, but strangely enough the weight loss is just as striking in patients who have carcinoma limited to the body and tail of the pancreas. All recent writers on the suject are agreed that the textbooks are wrong in describing the jaundice associated with this disease as "painless." As a matter of fact pain is the outstanding symptom and is the one which brings the patient to his doctor in the vast majority of cases. The pain is characteristically worse at night when the patient is lying down, and is relieved slightly by sitting up or walking about. It is frequently aggravated by eating(12). On explanation for the severity of this pain has been propounded by Chauffary and verified histologically by Duff. Cancer cells have been seen extending along the nerve sheaths of the solar plexus, and it is theorized that when the patient lies down on his back the protrusion of the spine and subsequent compression caused by the gland exacerbates the pain. Conversely some relief is gained by sitting up or flexing the thighs over the abdomen. Contrary to popular opinion, jaundice is not an early sign of carcinoma of the head. Other significant symptoms routinely precede jaundice by weeks or months. and it is an unusual case where jaundice will make its appearance early. Of 1,206 cases reported by 17 authors, jaundice was noted in 68.5%. As a rule the jaundice was pronounced and progressive, but remissions occasionally occurred(5). The mechanism of these remissions can best be explained by necrotic tumor tissue sloughing into the duodenum and temporarily relieving the obstruction. Jaundice is seldom seen with lesions limited to the body and tail. Gastrointestinal complaints of nonspecific nature figure prominently in the symptomatology of both types of lesions, and probably result from invasion of the wall of the small bowel. Wide and diffuse metastatic lesions are characteristic of carcinoma of the body and tail, and frequently cause the presenting symptoms. Metastases are only one third as frequent in carcinoma of the head, probably because of its "boxed in" situation. Diabetes and other less severe disturbances of carbohydrate metabolism are found in a high percentage of cases of carcinoma of the body and tail, but are seldom associated with carcinoma of the head. Berk considers abnormal glucose tolerance curves of great diagnostic significance in suspected cases of carcinoma of the pancreas. Diabetes has been projected as a predisposing cause of carcinoma of the pancreas. McKittrick and Root reported that 32 per cent of all cancers in diabetics they studied involved the pancreas. One of the most baffling discoveries to come out of cancer research in recent years is the association of multiple venous thromboses with carcinoma of the body and tail of the pancreas. Kenney, in his study of 51 cases of pancreatic cancer found no venous thromboses associated with carcinoma of the head, while 33 per cent of those whose cancer was limited to the body and tail had multiple venous thromboses(9). The implication that pancreatic cancer in some way alters the blood clotting apparatus is obvious, but the mechanism is not understood. Any patient with unexplained peripheral edema, particularly unilateral, should be suspected of suffering a venous thrombosis, which in turn should bring to mind the possibility of carcinoma of the body of the pancreas. By the same mechanism, thrombosis of the portal vein with resultant ascites is four times more common in carcinoma of the body. Another sign, steatorrhea, is as we would suspect, more common in lesions involving the head of the pancreas. These other signs are interesting if present, but the common signs of carcinoma of the pancreas may be boiled down to two. A palpable gall bladder is noted in approximately fifty per cent of jaundiced cases (the liver is usually palpable also), and an epigastric mass is palpable in slightly less than half the cases(7). Malignant tumors arising in aberrant pancreatic tissue have been reported. This tissue is most likely to be found in the wall of the duodenum, but has been reported in dozens of other locations (16).

Laboratory tests for carcinoma of the pancreas are helpful only when positive, and are seldom positive in early lesions. The tests most commonly employed are those which determine jaundice and pancreatic insufficiency. Posi-

tive findings which may be associated with this disease include anemia, hyperlipemia, fatty or bloody stools, positive Van den Bergh, high icterus index, absence of urobilinogen from the urine, presence of excessive bile in the urine, clay colored stools, meat fibers in stools, impaired glucose tolerance, hyperglycemia, glycosuria, elevated blood amylase and lipase, and duodenal drainage containing no pancreatic ferments but perhaps a few red blood cells(10). Most of these laboratory findings are associated with moderately or far advanced lesions of the head of the pancreas. The x-ray is some help, although its application to this field of diagnosis has rather definite limitations. It is of no help unless the duodenum is distorted. Much emphasis has been placed on Frostberg's "reversed 3" sign. It is indicative of edema of the papilla secondary to neoplasm in the vicinity of or actually in the ampulla. Other distortions which suggest neoplasm include ulceration, rigidity, and replacement of the normal rugal pattern of the duodenum by irregular coarse markings. Gross distortion of the C-loop, of course, is prima facia evidence of tumor. Roentgenological examination was of considerable help in detecting 32 of 68 cases without jaundice reported from the Mayo clinic in 1933(6).

All the diagnostic difficulty which surrounds the average case preoperatively is insignificant compared to the uncertainty which plagues the surgeon who explores the abdomen. Extremely difficult to differentiate grossly is chronic pancreatitis, which may render the pancreas stony hard, but which will regress if left alone and the biliary tract drained. Complicating the problem still further is the fact that the lesion most amenable to surgical cure, the small, deep-seated carcinoma of the head, is usually surrounded by a thick shell of chronic pancreatitis. A superficial biopsy will miss the neoplasm, while a deep biopsy is associated with greater danger from leakage of pancreatic juice(13). In no procedure is a satisfactory outcome more dependent upon astute surgical judgment. Once the decision has been reached that carcinoma of the head of the pancreas is present, the surgical attack must be considered. With a few minor variations, the radical operation of pancreatico-duodenectomy has been fairly well standardized. One should first incise the peritoneum along the lateral border of the duodenum allowing mobilization of the head of the pancreas and inspection of the portal vein. The pancreatico-duodenal artery must not be cut until it has been determined that the tumor can safely be dissected from the portal vein and superior mesenteric vessels. If the tumor is operable, one will proceed to transect the following structures: The ligament of Treitz, the stomach thru its lower third, the neck of the pancreas over the superior mesenteric vessels, the common duct at the level of the superior border of the first segment of the duodenum, and the jejunum a few centimeters distal to the ligament of Treitz. The common duct and stomach are then anastomosed to the jejunum. Most authors favor anastomosis of the neck of the pancreas to the jejunum in an attempt to preserve some external secretion(21). Brunschwig(4) prefers to suture the cut end of the neck of the pancreas, rather than anastomose it to the jejunum. He has observed that the majority of patients get along quite well without any external pancreatic secretion. To those who do not he gives pancreatin by mouth at mealtime. No other substitution therapy is apparently needed. In his study of this problem Whipple(19) reported that only about 20 per cent of patients deprived of their external pancreatic secretion developed significant disturbances of fat metabolism, the most important being fatty degeneration of the liver. Most writers are agreed that the enteric stream must not be allowed to pass over the opening of the common duct. Fatal cases of cholangitis have been reported when this precaution was not taken. Waugh and Clagett in summarizing their thirty cases of pancreaticoduodenectomy conclude that a postcolic, anti-peristaltic gastrojejunostomy distal to the biliary and pancreatic anastomoses is the procedure of choice. They also prefer the one stage procedure wherever possible and feel that pancreaticojejunostomy has definitely improved the prospect of normal postoperative nutrition. They prefer choledochojejunostomy to cholecystojejunostomy, and have made the interesting observation that postoperative survival is encouraging in those patients whose carcinoma was primary in the ampulla of Vater(18). Siler and Zinninger's report was much less encouraging. They had eight cases of proved ampullary carcinoma with a resectability rate of 50 per cent and a ten year mortality rate of 87.5 per cent. Their statistics on carcinoma of the extrahepatic bile ducts agree

with other reported series—a resectability rate of 10% and ten year mortality rate of 100 per cent(15).

The operation for resection of the body and tail of the pancreas is considerably more simple than the foregoing procedures. The pancreas is approached by dividing the gastrocolic ligament. The stomach is retracted upward and the transverse colon downward. The spleen is freed from its various attachments and used as a handle to pull up the tail and body of the pancreas, which is then transected at the level of election. Total pancreatectomy may be accomplished by a combination of the first two procedures. It is re-emphasized that totally pancreatectomized man is only moderately diabetic, requiring 20 to 40 units of insuluin a day(3).

Carcinoma of the papilla of Vater can frequently be resected transduodenally. After the duodenum has been opened the tumor is encircled by an incision extending thru the wall of the duodenum back into the substance of the pancreas to get well around the neoplasm. The transected bile and pancreatic ducts are then sutured into the wound, and the cut edges of duodenum brought together around the ducts (4).

Unfortunately the victim of pancreatic cancer usually presents such an interesting challenge in differential diagnosis that he does not come to surgery until a more than adequate period for study has elapsed. In the meantime he has lost the chance for a surgical cure. His few remaining months may be more comfortable by cholecysto-enterostomy. This particular operation is still the only surgical treatment which can be offered the majority of these patients.

A general idea of the results of pancreatic surgery is presented by Whipple(20). Some 165 radical operations are reported out of 4 of the country's largest surgical centers. The postoperative mortality for the entire series is 30 per cent, although this figure would be less than 20 per cent if the series were limited to cases done in the past 2 years. Some 20 per cent of these patients are alive, well and without evidence of recurrence 6 months to 6 years after surgery. Inasmuch as over half of all the pancreatic surgery ever done has been accomplished very recently, significant statistics on operative mortality and 5 year cure are not yet available.

The irradiation treatment of malignant tumors of the pancreas may be disposed of by saying that a proven case has never been cured by this modality. In all fairness, however, one must acknowledge that a great number of patients have shown remarkable temporary improvement following irradiation therapy. A trial of x-ray should not be denied any patient in whom a primary resection cannot be accomplished (2, 11).

### *Sarcoma*

Sarcoma of the pancreas need be mentioned only for the sake of completeness. Goldstein(8) reviewed 19 cases from the world literature in 1922. Since then, approximately one case per year has been reported. Most of these cases probably were not primary in the pancreas, and many more were not true sarcomas. From the microscopic descriptions one would surmise that a good number were metastatic melanoma or carcinoma. Shoemaker in 1941 reported 7 cases from the records of the Los Angeles General Hospital. The prognosis of such lesions is indicated by the inclusion of the autopsy protocol with all reported cases(14).

### *Summary and Conclusions*

(1) The attitude that cancer of the pancreas is a hopeless condition is not only untenable, but inexcusable in the light of present day knowledge.

(2) The use of blood, antibiotics, vitamin K, and silk technique have brought the operative mortality below 20 per cent.

(3) Both the operability and curability rates of cancer of the pancreas are rising as patients are brought to surgery earlier in the course of the disease. Unfortunately the majority of patients are still "studied" until their chance for surgical cure is gone.

### BIBLIOGRAPHY

1. Anderson, H. A.: Neoplasms of the Pancreas, North. ed., 47:106, 1948.
2. Brunschwig, A. and Templeton, F. E.: Roentgenographic Diagnosis of the Neoplasms of the Peri-Ampullary Region and Head of the Pancreas, Rad., 41:438, 1943.
3. Brunschwig, A.: Cancer of the Pancreas, Ill. Med. J., 92:82, 1947.
4. Brunschwig, A.: Cancer of the Liver, Bile Ducts and Pancreas, J.A.M.A., 136:28, 1948.
5. Dashiell, G. F. and Palmer, W. L.: Carcinoma of the Pancreas, Arch. Int. Med., 81:173, 1948.
6. Eusterman, G. B. and Wilbur, D. L.: Primary Malignant Neoplasm of the Pancreas, So. Med. J., 26:875, 1933.
7. Falomir, J. M. and Hughes, C. R.: Carcinoma of the Pancreas, Clev. Clinic Quart., 15:30, 1948.
8. Goldstein, H. I.: Sarcoma of the Pancreas, Am. J. Surg., 36:23, 1922.
9. Jennings, W. K. and Russell, W. O.: Phlebothrombosis Associated with Mucin-producing Carcinomas of the Tail and Body of the Pancreas, Arch. Surg., 58:186, 1948.
10. Porter, H. W.: Case of Lymphangioma in the Region of the Head of the Pancreas Causing an Obstructive Jaundice, Brit. J. Surg., 34:217, 1946.
11. Rishards, G. E.: Possibilities of Roentgen ray treatment of Cancer of the Pancreas, Am. J. Roentgenol., 9:150, 1922.
12. Rieke, F. A.: Clinical Manifestations of Carcinoma of the Pancreas, J. Kansas M. Soc., 48:359, 1947.
13. Saltzstein, H. C. and Johnson, W. S.: Carcinoma of the Pancreas: Operative Problems, Gastroenterology, 10:442, 1948.
14. Shoemaker, H.: Sarcoma of the Pancreas, Southwestern Med., 25:241, 1941.

15. Silver, V. E. and Zinninger, M. M.: Surgical Treatment of Carcinoma of the Ampulla of Vater and the Extrahepatic Bile Ducts, Arch. Surg., 56:199, 1948.
16. Siliver, G. B. and Lubliner, R. K.: Carcinoma of the Pancreas, Surg., Gynec. and Obst., 86:703, 1948.
17. Smith, P. R.: Carcinoma of the Pancreatic Head and Ampulla of Vater, M. Press, 5725:78, 1949.
18. Waugh, M. M. and Clagett, O. T.: Resection of the Duodenum and Head of the Pancreas for Carcinoma, Surg., 20:224, 1946.
19. Whipple, A. O.: A Consideration of the Surgical Treatment of Tumors of the Pancreas, Tenn. M. J., 35:179, 1942.
20. Whipple, A. O.: Early Diagnosis of Pancreatic and Ampullary Growths, J. Mich. State M. Soc., 47:169, 1948.
21. Wollaeger, E. E., Comfort, M. W., Clagett, O. T. and Osterberg, A. E.: Efficiency of Gastrointestinal Trace after Resection of Head of Pancreas, J.A.M.A., 1937:838, 1948.

# LATERAL CYSTS AND FISTULAS OF THE NECK

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The embryonic origin of lateral cysts and fistulas remains controversial. There are primarily two schools of thought: (1) that they are derived from a branchial cleft, (2) that they are derived from the embryonic thymic duct. The first group would term these: "Branchial Cysts and Fistulas" and the other would call them "Thymopharyngeal Duct Cysts and Fistulas." This author favors the latter, as these cysts and fistulas are found in the same anatomic location as the embryonic thymic duct which descends from the third branchial pouch in the lateral pharyngeal wall and proceeds to the lateral side of the neck, over the carotid sheath, under the sternomastoid, and finally comes to rest in the mediastinum to become the thymus. Rather than enter into the controversy the author has used the apeasement term: "Lateral Cysts and Fistulas of the Neck." They should, however, not be confused with the preauricular sinus which probably is of truly branchial cleft origin.

## CLINICAL PICTURE:

The so called lateral cyst (branchial or thymic) usually manifests itself as a painless swelling in the lateral side of the neck. The cyst is always unilocular and may be as small as 1 cm in diameter or it may also fill the entire side of the neck. The tumor is semi-fixed, uniform and non-translucent. It is not attached to skin and usually occurs in the upper third of the neck in definite relationship to the deep anterior fibers of the sternomastoid muscle. Although the cyst may bulge posteriorly, it invariably lies anterior to the carotid sheath. Distribution is equal between sexes and between the right and left side. Bilateral cysts do occasionally occur. Duration may vary from very recent to many years. Trauma does not seem to be a participating factor.

Ordinarily the cyst will cause no particular trouble until infection sets in, not infrequently following a sore throat. Thirty per cent of the patients seen by us have had previous infections with one to many incisions and drainage. Other complications do occur. Cough due to vagal stimulation has been reported. In a series of 33 patients reported by the author(1), one patient had difficulty in breathing and swallowing due to pressure of a large cyst. In another patient purulent thyroditis in a nodular goiter developed a few days after an infected cyst was incised and drained. Another had brachial plexus neuritis following removal of an infected cyst. Carcinoma has been reported, but Neal and Pemberton(2) in a series of 319 cases from the Mayo Clinic did not find a single instance of carcinoma. They made the statement that the diagnosis of branchial carcinoma is probably erroneous. Hendricks and Ward(3) in a recent article, however, had proven cases of carcinoma developing in a branchial cyst.

The lateral fistula (branchial fistula, thymic duct fistula) occurs about one tenth as frequently as does the cyst. Although it is frequently caused by ill-advised incision and drainage, true congenital fistula does occur. The opening may occur at any level but is invariably in relationship to the anterior fibers of the sternomastoid muscle, and the tract almost always follows a source just beneath these muscle fibers over the carotid sheath up to a point just beneath the midportion of the posterior belly of the digastric muscle, where it arches medially to enter the lateral wall of the pharynx in the vicinity of the tonsil. The discharge is of a milky, mucoid material and because of the pharyngeal communication, infection and purulent discharge is commonplace. Both cysts and fistulas are lined with stratified squamous epithelium on a lymphoid stroma.

## DIFFERENTIAL DIAGNOSIS:

A unilocular, non-translucent cystic swelling or fistulous tract which occurs in relation to the deep anterior fibers of the sternomastoid muscle is most likely a lateral (branchial) cyst.

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If aspiration yields cholestrol crystals, the diagnosis is definite. Other lesions to be differentiated are: thyroglossal cysts and fistulas, carotid body tumors, dermoid cysts, inflammatory and tubercular adenitis, socalled aberrant thyroid, lipoma, sebaceous cyst, neurofibroma, cystic hygroma and preauricular fistula.

Thyroglossal duct fistulas and cysts occur in the midline and invariably move when the patient swallows.

Carotid body tumors are very rare. Lahey(4) recently reported 22 cases occuring at the Lahey Clinic. Such tumors as Lahey(4) pointed out lie deeper than branchial cysts. Other distinguishing features are that they may be moved laterally but not vertically. They transmit pulsation from the carotid due to their location in the carotid bifurcation crotch. A bruit may be present. Lahey(4) has stated that these carotid body tumors are rarely malignant and the operation itself is hazardous. Aspiration may be warranted if doubt exists, as surgery of a carotid body tumor should not be undertaken without careful consideration.

A dermoid cyst may not be differentiated until its contents are examined. Probably one out of ten cysts in this location will be a dermoid cyst.

Lymphadenitis is usually bilateral and more than one node is involved. The nodes are tender and the offending focus can usually be traced. Tuberculous nodes are hard and matted. If there is a discharging sinus tract it is undermined, and the discharge may be caseous.

Aberrant thyroid is a misnomer. These are all metastatic carcinoma from a primary lesion in the thyroid, but they do frequently occur along the jugular group of nodes and may occur singly. Careful search may reveal a node in the thyroid gland on the ipsilateral side in a fair proportion of cases. It is in this group, however, where most of our mistaken diagnosis of branchial cysts have been made. They are, however, definitely deeper than branchial cysts.

A lipoma is soft. As a rule it is more superficial and the wavy contour of the overlying skin will be characteristic.

A sebaceous cyst is invariably superficial and is attached to the skin, usually with associated comedo.

Neurofibroma is rare. It is a firm, alongated nodule and lies along the course of a major nerve. The exact nature of the lesion may not be determined preoperatively but the discovery (at exploration) of a nerve stalk at both ends establishes the diagnosis.

Cystic hygroma usually occurs in the supraclavicular area but may occur anywhere in the neck and may extend into the mediastinum, axilla or arm. It is soft and flabby, and practically always multilocular. It is translucent except in cases where there has been hemorrhage. The fluid is straw colored and congeals after aspiration.

A preauriculuar sinus occurs in front of the ear and at a level with the upper portion of the ear. Inasmuch as the tract is lined with epithelium containing sweat and sebaceous glands, the secretion is of sebaceous debris deep in the tract. It is invariably present since birth and there is usually a history of many bouts of recurrent infection with more or less continuous discharge. The tract usually goes directly in and no deeper than the level of the tympanic membrane. It is debatable whether these tracts originate from a branchial cleft or an inclusion of the primitive six nubbins that form the external ear.

TREATMENT:

A lateral (branchial) cyst should be excised before infection appears. If the patient is in early infancy excision may be deferred until age two or later. In about twenty per cent of cases infection will be present when the patient is first seen. Removal at this time is inadvisable—in fact technically difficult or impossible—surgery should not be carried out until the infection has completely subsided. In the presence of infection; antibotics, aspiration, and occasionally incision and drainage are performed and no attempt at removal is made for at least an interval of two months after the infection has subsided.

For the removal of a so-called branchial cyst the author prefers to make a horizontal incision through skin and platysma. After the flaps are well reflected the cervical fascia is incised along the anterior fibers of the sternomastoid muscle. The approach should always be in front of the muscle even thouguh the cyst may bulge posteriorly, as the cyst always lies anterior to the carotid sheath. It may be necessary to reflect the sternomastoid muscle considerably laterally, or even to section a portion of it, but this is less hazardous than a posterior approach which first encounters the carotid sheath. If one er-

roneously operates too soon after infection there will be no line of cleavage and it would be safer to simply incise the cyst wall, touch the interior with iodine and place a guaze pack into the cavity and remove the cyst at a later date. The author has had this experience on three occasions. In one case the cyst wall collapsed without recurrence when the pack was removed. In the other two patients the cysts were removed in two months. A definite line of cleavage was then found and total excision was possible.

In he management of the fistula, incision described by Lahey(5) and Bailey(6) is preferred. This is the so-called stepladder incision. A horizontal elliptical incision is first made around the tract, which is then dissected upward beneath the cervical fascia as far as possible. A second horizontal incision is then made and the tract transferred into the upper incision. From here dissection of the tract is carried beneath the posterior belly of the digastric directly to the lateral pharyngeal wall. At this point an assistants finger pushes out at the lateral wall of the pharynx for further orientation and the tract is hen ligated flush with the pharyngeal wall. When properly managed a cure should be expected in all cases.

REFERENCES

1. Baumgartner, C. J.: Lateral Cysts and Fistulas of the Neck. California Medicine, 73:466-472, December 1950.
2. Neal, H. D., and Pemberton, J. deJ.: Branchial Cysts and Fistulas, Surgery, 18:281-288, September 1945.
3. Hendricks, James, and Ward, G. E.: Branchiogenic Anomalies, West. Jour. Surg., Gyn., & Obst., Vol. 57, 536-549, November 1949.
4. Lahey, F. H., & Warren, K. W.: A long term appraisal of carotid body tumors with remarks on their removal. Surg., Gyn., and Obst., 92:481-491, April 1951.
5. Lahey, F. H., and Nelson, H. S.: Branchial Cysts and Sinuses, Annals of Surgery, 113:508-512, April 1941.
6. Bailey, H.: he clinical aspects of branchial fistula, British Jour. Surg., 21:173-182, October 1933.

# CANCER OF THE COLON AND RECTUM
## A PLEA FOR EARLIER DIAGNOSIS

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It is a well-known fact to any physician who has had experience with carcinoma of the colon and rectum that patients with this disease will procrastinate from having an adequate investigation longer than those of any other form of cancer. It is also generally accepted that carcinomas of the colon and rectum offer a larger percentage of five year cures than any other type of cancer with the exclusion of skin carcinoma. Carcinoma of the colon and rectum is certainly not an uncommon disease, yet in many cases the diagnosis is not established till late in the process of the disease. One must remember that the diagnosis of carcinoma of the colon is a comparatively simple thing in the late stages. However, in many cases, it is very obscure at an early stage when operative interference will offer the greatest hope for cure. Knox Vinton of Rochester, New York reported in the American Journal of Digestive Disease in 1942 that during 1939 while accidents caused 120,000 deaths; respiratory diseases, 92,000; and tuberculosis 62,000, the various forms of cancer killed 154,000 people in the United States. Approximately 17 per cent of the 154,000 cancer deaths are due to cancer of the colon and rectum. This high mortality from carcinoma of the colon and rectum should provoke the interest of every member of the medical profession. Failure to cure the carcinomas of the colon and rectum are not due to a lack of operative technique.

Diagnosis of carcinoma of the colon and rectum is not difficult even in its earlier stages once the possibility or the presence of this disease is given some consideration. That it is not given consideration in many cases is shown by the fact that an interval of ten to twelve months, duration of symptoms elapses before the diagnosis is made. The delay in early diagnosis also explains the fact that in carcinomas of the colon and rectum only about fifty per cent are candidates for radical operative surgery. Even with this low percentage of candidates for operative interference, there still is a survival rate of about forty six per cent.

It is striking that a large percentage of patients with carcinoma of the colon and rectum have been treated for hemorrhoids either by hemorrhoidectomy or by injections for some time before diagnosis is made. In a large percentage of cases where hemorrhoidectomies or injections have been done, the carcinoma is within reach of the examining finger by rectal examination. It should always be the doctor's responsibility to consider the possibility of malignant disease of the colon and rectum before

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more advanced signs are present. It has been pointed out by Hanshen, of the Council Bluffs Clinic, that loss of weight a palpable tumor or mass in the abdomen, anemia and cachexia are not symptoms of carcinoma of the colon. These are terminal symptoms of metabolic and mechanical derangement of normal vital processes and occur with advanced disease. Symptoms produced by carcinoma of the colon and rectum will, in many instances, depend upon the location in the large bowel and rectum. It is intended to again remind us of the symptoms and signs of carcinoma in the colon and rectum in its early stages so that doctors may not be pointed out as being so negligent in this malignant disease.

For the purpose of simplicity, the discussion to follow will be under the headings of history and physical examination.

The diagnosis of malignant disease of the colon and rectum can be made in a large percentage of the cases, or at least suspected, by the history itself and later can be confirmed by examination.

1. *Alterations and changes in bowel habits*: Carcinomas in various sites of the colon and rectum, particularly the colon, will produce changes and alterations of the bowel habit. Carcinomas of the cecum and ascending colon may produce changes in the bowel habit such as constipation and diarrhea, rather late, while lesions of the left side of the colon, particularly the rectosigmoid, may produce signs of obstruction much earlier. This is easily explained because of the fact that the feces are much more liquid in the right half, than in the left half of the colon and rectum. The closer the carcinoma is to the ileocecal valve, the earlier the symptoms of obstruction may appear in the right half of the colon; and just as often as in the left half of the colon. Cromar, Morgan and Dixon reported sixty-one cases of cancer of the colon and rectum that measured less than 2.5 cms. in diameter. While these are very small lesions, yet fourteen of these in the proximal part of the colon had caused symptoms of intestinal obstruction. While constipation is one of the earlier symptoms of carcinoma of the large bowel, diarrhea may occur and in 15 per cent according to Freed, Morwell and Feldman, of Baltimore, Maryland. Furthermore alternating diarrhea and constipation occurred in 10 per cent of their cases. Because a patient gives a history of life long constipation it does not necessarily rule out carcinoma of the large bowel and rectum. Careful inquiry into the history of these patients may reveal the fact that the constipation has suddenly gotten worse recently. This certainly should make one think of the presence of carcinoma of the colon and rectum. Carcinomas of the rectum do not so frequently give the history of constipation but of a diarrhea, particularly with much tenesmus if the lesion encroaches upon the internal sphincter in the rectum. Some patients complain of very foul smelling stools particularly when the carcinoma has reached a period of growth in which there is some obstruction. This is due to sudden evacuation of obstructed fecal content which has undergone decomposition. Other symptoms such as the loss of appetite, gaseous eructions, nausea, and flatulence may be present. Indeed, these maybe the symptoms that first brings the attention of the patient to the fact that there is something wrong, particularly in the carcinomas of the cecum and ascending colon. These, will increase as the process of the obstructive lesion increases. In carcinoma of the distal colon progressive constipation is much more marked.

2. *Pain*: Pain is variable. Abdominal pains and cramps vary according to the location of the growth. Early in carcinomas of the cecum and ascending colon there is vague abdominal discomfort referred to the epigastrium accompanied by pain referred to the lower right quadrant. This, is pain of the obstructive type the closer the carcinoma is situated to the ileocecal valve. Leahy, in an article on Diagnostic and Prognostic Signs of Cancer of the Colon and Rectum in 1945, based on 300 cases of carcinoma of the colon and rectum by Swinton, stated that in carcinoma of the rectum, dull pains and cramps were present in 7 per cent; left colon, 77 per cent; right colon, 87 per cent, and a total of 57 per cent of patients with carcinoma of the colon and rectum showing abdominal cramps or pain. It has been pointed out by Leahy, Feldman, Barkens and others that bowel pain and discomfort will occur as a primary symptom of the disease in as much as 50 per cent of the cases and as the disease develops will go as high as 75-80 per cent. It is not an uncommon thing to have appendices removed for recurrent attacks of pain and discomfort in the lower right quadrant when there

was a carcinoma in the upper cecum and ascending colon. Many times reflex disturbances in the upper intestinal tract due to carcinomatous lesions in the right colon will distract one's attention from the primary lesion. In the transverse colon, intestinal discomfort such as colic and pain are early symptoms. With increasing obstruction due to the carcinoma, the pain, is colic in type, and becomes more intense and severe. Pain in the left side of the colon may be only discomfort in the left lower quadrant at first. However, as the obstruction progresses, abdominal distention and colicky pain become more prominent. There may not be much discomfort in rectal carcinoma unless there is encroachment on the lower part of the rectum. Pain here is mostly in the form of tenesmus and a feeling of incomplete evacuaution of the bowels.

3. *Hemorrhages* Hemorrhage or blood in the stool occurs most frequently in carcinomas of the rectum. Here, one of the early symptoms is rectal bleeding. This frequently causes the patient to report to the doctor that hemorrhoids are resent. Blood, in the stool occurs in anywhere from 80-90 per cent of the rectal cancers, while in colon carcinoma it is only around 40-50 per cent. In cancers of the right colon, bleeding occurs in 9 per cent. In the right colon bleeding occurs often but is overlooked on account of the dark character of the blood. This probably accounts for, a lower percentage of history of bleeding. One must inquire carefully into the character and color of the stool to get the history of bleeding. While it has been mentioned that blood in the stool may be masked as far as the patient is concerned by the color of the stool, ulcerating lesions on the left side of the colon and rectum provokes the attention of the patient because the blood is bright red. Some patients will give a history of some bleeding prior to the development of the carcinoma. This bleeding, may be caused by a benign polyp. The polyp may bleed for sometime before undergoing malignant change. This has been pointed out by Leahy who has said that 3 per cent of people have polyps in the rectum or colon, the discovery of which will not insure them against the possibility of later carcinoma. These lesions are known to degenerate malignantly in a high percentage of cases. Discovery of some benign lesion that would cause a hemorrhage, such as posterior anal ulcer, fissure or hemmorrhoids does not exclude a carcinoma developing higher up out of reach of the examining finger or even the proctoscope. It should be routine practice, although a benign lesions has been discovered that causes bleeding, to perform a barium x-ray examination.

Other symptoms such as cachexia, toxemia, loss of weight, anemia, and dyspepsia are common. These may be late symptoms except in carcinomas of the right side of the colon. Many times the first symptoms are loss of weight, anemia, and cachexia.

It has never been explained why carcinomas of the right side of the colon may reach the stage of palpability yet be resectable, while carcinomas of the left side of the colon and rectum when they have approached this stage of development, as a rule, cannot be resected. Also there is such a thing as "silent" carcinoma of the large bowel. That is, there are carcinomas that produce no particular symptoms and are discovered accidentally in a routine examination. Stroll and Bargens reported a series of (6.7 per cent of such cases). Loss of weight may be as much as 40-45 pounds. Progressive anemia, of secondary type, usually appears late on the right side of the colon.

*Physical Examination*:

In most instances when a palpable mass can be determined on abdominal palpation, carcinoma of the colon is in a late stage. In some cases, this sign may be the first objective manifestation. Tumor masses of the colon may at one time be definitely palpated while on another occasion they may not. This is due to changes in the position of the bowel. Especially is this true in growths in the cecum and descending colon. Carcinomas in the hepatic flexure are very difficult to palpate, because they may be obscured by the overlying liver. In a small percentage of cases palpation of the left side of the colon or transverse colon may give referred pain over the cecal area in carcinomas of the cecum. This is explained by the pressure on the colon producing tension in the cecum where an ulcerating lesion is present. In late stages of carcinoma of the colon, palpable masses can be made out in over 50 per cent of cases. Many times abdominal palpation will give tenderness directly over the carcinomatous area of the bowel, especially in late stages and when there has been some leakage through a perforation

or when a large amount of secondary infection is present.

*Digital Examination*: In about 60 per cent of cases of carcinoma of the rectum the carcinomatous growth is within reach of the examining finger. Digital examination also gives some idea of the mobility of the growth, which would influence the prognosis and operability of the carcinoma. There is usually a typical feel to carcinomas of the rectum on digital examination. There is a large, hard, elevated border with an excavated center in the central portion of the mass. Many times the folds in the rectum will not reveal an early carcinoma as seen through the proctoscope while digital examination will give the examiner the correct estimation of the disease. One portion of the rectum low in the ampulla, cannot be seen by a proctoscopic examination or be revealed by x-ray examination and can only be felt and discovered by digital examination. There is no question that carcinomas of the ampulla are missed because of the lack of a digital examination even though proctoscopic examination has been carried out. Further, digital examination will help one determine the location of the growth in the rectum and should always precede sigmoidoscopic examination. In all disturbances of the bowel function a digital examination should never be neglected. In fact, a gastro-intestinal investigation is never complete without digital examination.

*Sigmoidoscopic Examinations* All gastro-intestinal examinations for any chronic disturbances of bowel function are not complete without a proctosigmoidoscopic examination. In the use of the sigmoidoscope one should remember that the insertion of the sigmoidoscope and withdrawal should be done several times before completing the examination. Especially is this true in the withdrawal of the sigmoidoscope as some hidden lesion may be located in the folds of the mucous membrane and be obscured unless the slow withdrawal and thorough examination is carried out. Furthermore sigmoidoscopic examination will reveal polyps of the rectum and recto-sigmoid which are, as has been pointed out, potential malignancies. Lesions of the descending colon cannot be seen with the sigmoidoscope but the fact that blood, pus and debris may be seen on the rectal wall through the proctoscope and sigmoidoscope should certainly aroue one's suspicions of carcinoma lying beyond the reach of the sigmoidoscope. On two occasions in our series of cases, carcinoma could not be demonstrated by x-ray but a laporatomy was done on the strength that pus, blood and debris which could be seen on the rectal wall. Exploratory laporatomies disclosed lesions of the descending colon which were very early and were not diagnostic by x-ray examination.

*X-ray or roentgenologic examination of the colon*: A single x-ray examination of the rectum or colon should never be relied upon as a final diagnostic procedure. It is true that x-ray evidence of carcinoma of the colon, may, in many instances, be elicited long before clinical manifestations exhibit themselves. An upright view should always be taken and a double enema of barium and air should always be taken for mucosal studies. This was brought out in an excellent article by Jocoby and Lutz of New York City. Carcinoma is a lesion developing in the mucous membrance and extending from it and the study of mucosal patterns reveals earlier lesions. This also helps differentiate other benign lesions that develop outside of the bowel and produce symptoms by protrusion into the bowel. Three cases that were missed by ordinary barium enema examination were clearly shown by definite mucosal studies. One should rely upon the radiologist to prepare the patient before examination when one suspects carcinoma. The radiologist should be given full rein in the preparation of the patient before barium enema examination so that he may carry out air contrast which is nearly impossible unless the patient has been properly prepared beforehand. The degree of contractility and elasticity of the colon can be determined only by mucosal study methods and many times it is completely obscured by the use of routine barium enemas. All carcinomas of the rectum and large bowel start at one point in circumference in the mucous membrane, and it is possible that as the lesion is visualized in the roentgenogram to make a rough guess as to the length of time the lesion has existed. This gives us some idea of the possibility of there being distant metastases. Leahy states that when a carcinoma of the colon or rectum has become annular it can be assumed that such a lesion is six months to a year old, and that when, in addition to this, the lesion has not only become annular, but his extended around the tube of the bowel so that the lesion is canalized to such an extent that a

definite canal can be seen in the roentgenogram, it can be assumed that another six months is required for the growth to extend along the tube of the bowel to produce the canalization. It can, therefore, be said that any annular lesion of the colon and rectum is a miminal of six months old and that an annuluar lesion that has become canalized is, in all probability, a minimal of nine months to a year old and that these lesions that are old, in a very large number of cases, will prove inoperable. Therefore, it is important that studies of the mucosal pattern be done to detect these lesions before these annular strictures take place.

It is evident that the surgeon should work in close harmony with the roentgenologist and leave the examination of the rectum and colon up to him entirely in so far as the x-ray diagnosis is involved.

*In Conclusion*: It has been pointed out frequently by different authors that usually two persons are to blame for delay in diagnosis of carcinoma of the colon and rectum. These two people are: the patient and the first consulting doctor. The patient is totally unaware of what is going on and is reticent to have proctoscopic and colonic examination. The first consulting doctor, on the other hand, many times has exhibited a woeful lack of interest in this condition or has an aversion for rectal diseases. He is too ready to discontinue examination when some benign condition such as gallbladder disease, ulcer, fissure or hemorrhoids is found and he has not suspected a malignancy of the bowel. 60 per cent of all large bowel malignancies are within the lower ten inches of the bowel, and are readily demonstrable.

Although the present cancer campaign may result in much cancer phobia and hysteria it must be realized that none of these benign conditions will kill the patient while cancer will. Furthermore, it is incumbent upon the first consulting doctor to consult freely and work continuously and in harmony with the surgeon, the roentgenologist, and the internist. If this is carried out, in the near future more early carcinomas of the large bowel and rectum will be found, and be amenable to extirpation.

## RESULTS OF ONE HUNDRED CRANIOTOMIES AT THE ARIZONA STATE HOSPITAL*

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One hundred craniotomies were performed between October 13, 1947 and February 7, 1952, on ninety patients who resided at the Arizona State Hospital. This work represents the operative phase of the diagnostic and therapeutic program of the Neuro-surgical Unit of the hospital, and may be subdivided in the following manner:

I. Psycho-surgery Project
II. Epilepsy Project
III. Miscellaneous neuro-surgical problems

A brief description is presented of the projects involved, and also an accounting of the results of neuro-surgical treatment of these patients, who were refractory to other methods of treatment and accordingly were faced with permanent institutional care.

### I. *Psycho-Surgery Project*

The utilization of neuro-surgery as a therapeutic weapon for dealing with some of the more severe psychoses was reported by Dr. Egas Moniz in 1935(1). For some years prior to this, he had entertained the thought of interrupting frontal lobe projections for this purpose because of the clinical observation of improved behavior in certain patients with injuries or tumors in this area, and on the basis of the behavioral changes in the chimpanzees, Becky and Lucy, following bilateral removal of the frontal areas (Fulton and Jacobsen)(2). The degree of later success of this concept is indicated by the fact that the Nobel prize winner for 1949 in Medicine was Moniz,—for his work in the field of psycho-surgery. Frontal lobotomy was introduced in America in 1936 by Freeman and Watts(3).

The undesirable effects of the frontal lobotomy operation are well known, including: changes of personality in respect to loss of social consciousness, ambition, imagination and foresight, along with a fairly low percentage of post-operative complications, such as hemorrhage, infection, epilepsy and urinary incontinence. The beneficial results of normalized emotional responsiveness following these procedures have

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been sufficient to justify them from the standpoint of rehabilitation,—but, more selective procedures are being studied with the hope of obtaining the improvement, with a reduction of the undesirable side-effects of the surgery.

Our project has concerned the selection of fifty-seven chronic mental patients for psychosurgery and the evaluation of the effects of bilateral orbitofrontal lobotomy performed from October 13, 1947 to February 7, 1952, as a treatment for these patients (Green, Duisberg, and McGrath)(4). Orbitofrontal lobotomy was decided upon instead of the more extensive standard frontal lobotomy in order to attempt to reduce the undesirable blunting of personality which follows the latter procedure, and predicated on the encouraging but unconfirmed clinical reports of Hofstatter and associates in 1945(5) and the known anatomic and physiologic evidence of concentration of frontothalamic projections thru' the orbitofrontal areas Clark (6), von Bonin and Green(7).

*Selection of Patients*: The patients were all committed to the state mental instituion, and had resided there for an average of eight years, not responding to the standard therapy, including shock, etc., and in most instances being disturbed to the degree that confinement on closed wards was a necessity. Following referral from the Psychiatric Staff of the hospital, the patients were examined by two psychiatric consultants (R. E. H. D. and W. B. McG.). Fifty seven patients were considered to have sufficient emotional responsiveness with their psychiatric abnormality to warrant consideration of surgical intervention. Thus, the estimation of degree of emotional "charge" was based upon the complaints, behavior and autonomic status, and to a degree, constituted the major indication for surgery. Without such abnormal responsiveness, the operation is contra-indicated. Further studies included psychometric, electroencephalographic, pneumoencephalographic, spinal fluid, and medical evaluations in almost all cases prior to neuro-surgical recommendations.

*Surgical Technique*: Utilizing Sodium Pentothal anaes'hesia, 1½ inch crown trephinations were made in the low frontal areas on both sides at measured point (3 cm. posterior to the lateral rim of the orbit and 6 cm. perpendicularly above this). Under direct vision, thereby following a generally accepted basic principle of adequate surgical exposure, lesions were placed in the orbitofrontal areas above the plane of the wing of the sphenoid bone and sparing the upper quadrants of both frontal lobes.

*Results of orbitofrontal lobotomy*: Fifty-seven patients have now been studied by us for four to fifty-five months following surgery. Evaluation of results in each patient was based on a combination of psychiatric and psychometric determinations, the social adjustment of the patient either in or outside of the hospital, and information obtained from questionaires submitted to relatives.

Twenty-four patients were improved to the point that they have been discharged from the hospital and are now living at home. Eleven of these are independent and self-supporting, eight are partially self-supporting but require some supervision, and five require care and observation.

Thirty-one patients have remained in the hospital, with the majority (18 patients) becoming improved to the degree that they can be handled on open wards and in many cases assist on ward or ground crews. Four of these persons could be sent home if their home environment was satisfactory. Twelve patients have shown temporary or no improvement, and one is worse. Two patients have expired: causes of death were: (1) Arteriosclerotic heart disease, hypertension, and cardiac decompensation, 12 months following surgery, and (2) Cerebral thrombosis, hypertension, diabetes mellitus and bronchopneumonia, one week after surgery. Neither are considered as operative fatalities.

Thus, 42 patients can be said to have been improved in varying degrees with 24 home and 18 still in the hospital in this category. (11 patients have regressed after temporary improvement, and 5 patients have improved after showing no immediate benefits.

There have been three instances of post-surgical infection, three cases of convulsive abnormalities post-operatively, but no complications referable to hemorrhage or urinary incontinence.

Table I depicts clinical results according to diagnostic categories.

These results compare favorably with other published reports. Fulton(8) in summarizing the results as reported at the December 1948 meeting of the Association for Research in Nervous and Mental Diseases commented that 35-50% of the hospitalized cases were reported as

RESULTS OF ORBITOFRONTAL LOBOTOMY
57 PATIENTS DURING 4-55 MONTHS

| DIAGNOSIS | AT HOME | | | IN HOSPITAL | | | DEAD |
|---|---|---|---|---|---|---|---|
| | INDEP. | PARTLY INDEP. | DEPEND. | IMPR. | UNIMP. | WORSE | |
| SCHIZOPHRENIA, 45 CASES | | | | | | | |
| CATATONIC | 2 | 4 | 4 | 6 | 4 | | |
| PARANOID | 5 | 1 | 1 | 7 | 3 | | 1 |
| HEBEPHRENIC | | | | 3 | 3 | 1 | |
| TOTALS | 7 | 5 | 5 | 16 | 10 | 1 | 1 |
| MANIC DEPRESSIVE 5 CASES, ALL MANIC | 2 | 1 | | 2 | | | 1 |
| INVOLUTIONAL PSYCHOSES 2 CASES, PARANOID TYPE | 1 | | | | 1 | | |
| PSYCHONEUROSES (1) ANXIETY NEUROSIS SEVERE WITH CACHEXIA | 1 | | | | | | |
| PARANOID CONDITIONS 2 CASES | | 1 | | | 1 | | |
| MENTAL DEFICIENCY WITH AGIT. DEPR. PSYCHOSIS | | 1 | | | | | |
| TOTALS | 11 | 8 | 5 | 18 | 12 | 1 | 2 |
| | 24 | | | 31 | | | |
| | 41 | | | 13 | | | |

TABLE I

being sufficiently improved to be sent home to their families (24 of 57 patients in our series); 15-20% of the remainder in the various series were sufficiently improved to be able to take on odd jobs in the institution; 30-35% were unimproved 12 of 57 in our series); and not more than 1-3% were said to have been made worse (1 of 57 in our group).

The incidence of epilepsy following frontal lobotomy has been reported to vary from 10-14%, (Scoville(9), Freeman and Watts(10), and Columbia-Greystone Associates(11). To date we have encountered this complication in 3 of the 57 patients.

II. *Epilepsy Project*

All patients in the institution and a few outpatients who suffered from convulsive disorders or sudden outbursts of abnormal behavior were referred by the Psychiatric Staff to the Neuro-Surgical Unit for evaluation. Neurologic, psychiatric and psychometric studies were supplemented by electroencephalographic and pneumoencephalographic examinations, in order to clarify the diagnosis.

If no evidence of focal epilepsy could be obtained on the basis of the seizure pattern or other studies, the patient was then managed subsequently on drugs and general measures.

Surgical therapy was considered in patients with clinical and laboratory evidence of focal epilepsy if intensive medical therapy failed, and provided some degree of social and economic rehabilitation could be expected if the seizures could be stopped by surgical means. The indications and contra-indications for surgical therapy in epilepsy must be strict in order to obtain successful results. (Penfield and Erickson(12), Walker(13), and Green(14).

Excisions of meningo-cortical scars have been made in the treatment of focal epilepsy since the era of modern neuro-surgery, beginning with Sir Victor Horsely in 1886(15). In carefully selected patients, the seizures have been eliminated in nearly one half of the reported cases (Penfield and Erickson(12) and Penfield and Steelman(16). Since the development of electrocorticography the role of the scar in the production of epilepsy has been emphasized less, and that of the adjacent pathologic cortex recognized (Walker (17), Penfield(18), thus leading to wider cortical excisions. The work of Fuster, Gibbs and Gibbs(19) suggesting that "psychomotor" seizures may be focal in the anterior portion of the temporal lobe led to the surgical treatment of psychomotor epilepsy (Bailey and Gibbs(20)(21), thereby extending the therapeutic armamentarium to this group of patients. Our project, aided by Drs. Bailey and Gibbs, represents the first carefully controlled series of focal epileptics of psychomotor type treated surgically in a state mental institution.

Between July 6, 1948 and August 6, 1951, twenty seven patients with focal epilepsy were treated by neuro-surgical means. It is of unusual interest that 23 of these patients suffered from Focal Epilepsy of Psychomotor Type, with temporal lobe disorders, and only 4 had focal abnormalities of other types. These four patients suffered from Jacksonian Epilepsy of frontal lobe origin. This disproportion indicates the role of the temporal lobe in the psychiatric disorders associated with epilepsy.

*Surgical Technique*: Utilizing Sodium Pentothal anaesthesia, supplemented by 1¼% Procaine infiltration of the scalp, an osteoplastic craniotomy was done in order to expose the general area of the cerebral cortex which contained the epileptogenic focus. This focus could usually be well delineated by means of electrocorticog-

raphy, supplemented by the use of electrical stimulation. Cortical excision, by subpial dissection methods, was completed, and electrical studies were then repeated to determine the adequacy of the removal of the epileptogenic focus.

*Results of Cortical Excisions for Focal Epilepsy*: Twenty seven patients have now been studied by us from nine to forty six months following surgery. Evaluation of results in each case was based on a combination of social adjustment, ability to work, psychiatric status, and the degree of relief from seizures.

Sixteen patients were improved to the point that they have been discharged from the hospital and are now living at home. Eight of these are independent and self-supporting, four are partially self-supporting, and four require care and observation at home, and are occasionally readmitted to the hospital for periods of observation.

Eleven of the patients have remained in the hospital, with the majority (seven) becoming improved to the degree that they are some help on the wards, three were unimproved, and one expired 28 months following surgery of pneumonitis, after having been improved.

Thus, 23 patients can be said to have been improved in varying degrees, with 16 home, and 7 in the hospital in this category.

Detailed data regarding these patients are available in our previous publications (Green, Duisberg, and McGrath(22)(23), and Bailey, Green, Amador, and Gibbs(24).

Table II is an outline of clinical results according to diagnostic categories.

RESULTS OF CORTICAL EXCISIONS
FOR FOCAL EPILEPSY
27 PATIENTS, DURING 9–46 MONTHS

| DIAGNOSIS | AT HOME | | | IN HOSPITAL | | | DEAD |
|---|---|---|---|---|---|---|---|
| | INDEP. | PARTLY INDEP. | DEPEND | IMPR. | UNIMPR. | WORSE | |
| TEMPORAL LOBE (PSYCHOMOTOR EPILEPSY) 23 CASES | 8 | 3 | 1 | 7 | 3 | 0 | 1 |
| FRONTAL LOBE (JACKSONIAN EPILEPSY) 4 CASES | 0 | 1 | 3 | 0 | 0 | 0 | 0 |
| TOTALS | 8 | 4 | 4 | 7 | 3 | 0 | 1 |
| | 16 | | | 10 | | | |
| | 23 | | | 3 | | | |

TABLE II

III. *Miscellaneous Neuro-Surgical Problems*

Five patients have been investigated because of the tenative diagnosis of "*Brain Tumor*". Encephalopathy of undetermined origin was present in 3 of these patients, neoplasm being ruled out on the basis of normal ventriculograms and carotid arteriograms. One patient proved to have a *medulloblastoma* within the fourth ventricle, arising from the vermis of the cerebellum. This tumor was incompletely removed on May 28, 1951. He is still symptom free eleven months later and is working, but the ultimate prognosis is poor. The fifth patient proved to have a *glioblastoma multiforme* within the left frontal lobe. This tumor was incompletely removed on October 24, 1951. The patient continues to have his symptoms of mental deficit and is receiving medical care in the East at the present time.

The final patient to be reported, our 84th craniotomy, was referred from Yuma, Arizona, in a nearly terminal state. An osteopathic neurosurgeon in Los Angeles had turned down a bone flap of skull to remove a suspected intra-cranial hematoma, and was unable to make a closure, thereby allowing herniation of the left hemisphere of the brain, with secondary paralysis of the right side of the body and loss of speech. The cerebral fungus was removed, but because of infection and the poor condition of the patient, death occurred in his home several months later.

*Summary*

The operative phase of the diagnostic and therapeutic program of the Neuro-Surgical Unit of the Arizona State Hospital in relationship to the effect on rehabilitation of otherwise unmanageable institutionalized patients is discussed.

One hundred craniotomies were performed between October 13, 1947, and February 7, 1952, or ninety patients without operative mortality. Four patients are now dead of other causes.

Of 57 psychotic patients who were treated with orbitofrontal lobotomy, 24 are home (11 working and independent, 8 partially indepen-

dent, 15 dependent), 31 remain in the institution (18 improved, 12 unimproved, 1 worse), and 2 are dead.

Of 27 patients with focal epilepsy, treated by cortical excision, 16 are home (8 working and independent, 4 partially independent, and 4 dependent), 10 remain in the institution (7 improved, 3 unimproved), and 1 is dead.

Of six patients who were treated for other conditions, 5 were considered to have brain tumors, and 1 had a cerebral fungus following a craniotomy done outside of Arizona. Two malignant cerebral neoplasms were treated operatively (1 patient is still independent and working, and the other is in a hospital in the East); the remaining three patients in whom brain tumor was suspected are at home, special studies having shown no evidence of neoplasm. The cerebral fungus (herniation) was repaired, but was so extensive that the patient ultimately expired in his home. Table III.

NEURO-SURGERY --- ARIZONA STATE HOSPITAL
100 CRANIOTOMIES, 90 PATIENTS, 4-55 MONTHS
NO OPERATIVE FATALITY

PSYCHO-SURGERY (ORBITOFRONTAL LOBOTOMY) --- 57 PATIENTS
CORTICAL EXCISIONS (FOCAL EPILEPSY) --- 27 PATIENTS
MISCELLANEOUS, INCL. 2 BRAIN TUMORS --- 6 PATIENTS

45 HOME 41 IN HOSPITAL 4 DEAD

| INDEPENDENT | PARTLY INDEP. | DEPENDENT | IMPROVED | UNIMPROVED | WORSE |
|---|---|---|---|---|---|
| 20 | 14 | 11 | 24 | 15 | 1 |

ANNUAL AVERAGE COST FOR 1 INSTITUTIONALIZED PATIENT = $1,000.00
FUTURE SAVINGS EACH YEAR RESULTING FROM THESE PROJECTS = $45,000.00

TABLE III

## *Conclusions*

The projects as outlined above have been productive from the standpoint of clinical research of otherwise unrehabilitable patients in a state mental institution, thus providing a definite means of treatment. The results of neurosurgery of this type have enabled 45 of the patients to leave the hospital and to be at home (20 are independent, 14 are partially independent, 11 are dependent). Of the 41 patients still residing in the institution, 24 have been improved, 15 unimproved and 1 is worse.

The economic aspects of being able to discharge patients from a state institution are as important to the state and is taxpayers as to the patient and his family. The average cost of one thousands dollars a year to care for an institutionalized person goes on year after year. Thus, the forty five patients who now have left the institution represent not only a saving for the state of approximately $45,000.00 for each subsequent year but also a measure of humuanitarian and scientific advance.

### BIBLIOGRAPHY


1. Moniz, E.: Tentatives operatoires dans le traitement de certaines psychoses. Paris, Masson et Cie, 1936. 348 pp.
2. Fulton, J. F., and Jacobsen, C. F.: The functions of the frontal lobes, a comparative study in monkeys, chimpanzees, and man. Abstr. 2nd int. neurol Congr., Lond. 5319. pp. 70-71.
3. Freeman, W., and Watts, J. W.: Prefrontal lobotomy in agitated depression. Report of a case. Med. Ann. Distr. Columbia, 5 (Nov.): 326-329, 1936.
4. Green, J. R., Duisberg, R. E. H., and McGrath, W. B.: Orbitofrontal lobotomy. With reference to effects on 55 psychotic patients. J. Neurosurg. (in press).
5. Hofstatter, L., Smolik, E. A., and Busch, A. K.: Prefrontal lobotomy in treatment of chronic psychoses, with special reference to section of orbital areas only. Arch. Neurol. Psychiat., 53:125-130, 1945.
6. Clark, N. E. LeGros.: The connections of the frontal lobes of the brain. Lancet. 254:353-356, 1948.
7. von Bonin, G., and Green, J. R.: Connections between orbital cortex and diencephalon in the macaque. J. Comp. Neurol., 90:243-254, 1949.
8. Fulton. J. F.: Functional localization in relation to Frontal Lobotomy. New York and London, Oxford University Press, 1949, 140 pp.
9. Scoville, W. B.: Selective cortical undercutting as a means of modifying and studying frontal lobe function in man. Preliminary report of forty three operative cases. J. Neurosurg., 6:65-73, 1949.
10. Freeman, W., and Watts, J. W.: Psychosurgery. Charles C. Thomas, Publ., Springfield, Ill., 2nd Edit., 1950, 598 pp.
11. Mettler, F. A.: The Columbia-Greystone Associates, edited by F. A. Mettler. Selective partial ablation of the frontal cortex. A correlative study of its effects on human psychotic subjects. New York, Paul B. Hoeber, Inc., 1949, 517 pp.
12. Penfield, W., and Erickson, T. C.: Epilepsy and Cerebral Localization. A study of the mechanism, treatment and prevention of epileptic seizures. Springfield, Ill.: Charles C. Thomas, 141, X, 623 pp.
13. Walker, A. E.: The treatment of epilepsy by cortical excision. J. Ped., 38: 285-298, 1951.
14. Green, J. R.: Indications for surgical therapy in epilepsy. Ariz. Med., 8: 2-27, 1951.
15. Horsley, V.: The function of the so-called motor area of the brain. Brit. Med. J., 2: 125-132, 1909.
16. Penfield, W., and Steelman, H.: The treatment of focal epilepsy by cortical excision. Ann. Surg., 126: 740-761, 1947.
17. Walker, A. E.: Posttraumatic epilepsy. Springfield, Ill., Charles C. Thomas, Publ., 1949, VIII, 86 pp.
18. Penfield, W.: Cited in editorial: Surgical treatment of focal epilepsy. J.A.M.A., 141: 604-605, 1949.
19. Fuster, B., Gibbs, E. L., and Gibbs, F. A.: Pentothal sleep as an aid to the diagnosis and localization of seizure discharges of the psychomotor type. Dis. Nerv. System, : 199-202, 1948.
20. Bailey, P., and Gibbs, F. A.: A preliminary report on therapeutic results of temporal lobotomy for psychomotor epilepsy. Read before the Central Assoc. of Electroencephalographers, Chicago, Nov. 27-28, 1948.
21. Bailey, P., and Gibbs, F. A.: The surgical treatment of psychomotor epilepsy. J.A.M.A., 145: 365-370, 1951.
22. Green, J. R, Duisberg, R. E. H., and McGrath, W. B.: Focal epilepsy of psychomotor type. A preliminary report of observations on effects of surgical therapy. J. Neurosurg., 8: 157-172, 1951.
23. Green, J. R., Duisberg, R. E. H., and McGrath, W. B.: Electrocorticography in psychomotor epilepsy. EEG and Clin. Neurophysiol., 3: 293-299, 1951.
24. Bailey, P., Green, J. R., Amador, L., and Gibbs. F. A.: Treatment of psychomotor states by anterior temporal lobectomy: A report of progress. Read before the Assoc. for Res. Nerv. Ment. Dis., New York, December 15, 1951.




# PHOENIX Clinical CLUB

## MASSACHUSETTS GENERAL HOSPITAL CASE NO. 36271

**The Case History in this discussion is selected from the Case Records of the Massachusetts General Hospital, and reprinted from the New England Journal of Medicine. The discussant under Differential Diagnosis is a member of the staff of the Massachusetts General Hospital. The other discussants are members of the Phoenix Clinical Club.**

First admission. A thirty-seven-year-old housewife was admitted to the hospital for repair of a cystocele and lacerated cervix. She had had seven pregnancies, which were followed by normal lactation. Severe hemorrhage followed a dilatation and curettage and routine plastic repair, and six days after the plastic repair the cervix was amputated. The patient was discharged in good condition on the twenty-fifth hospital day.

Second admission (twenty years later). The patient had a spontaneous normal menopause at the age of forty-five. She had always had a somewhat withdrawn personality, but at about the age of fifty-four she began to spend most of her time in her room. She complained of fatigue and weakness and developed a craving for sweets. For seven weeks before her second admission, she was too weak to do any housework or shopping. Two weeks before admission a series of dental extractions was begun. For six days before entry she refused all food and took only minimal amounts of water. On the morning of admission she was cold, sweaty and totally unresponsive.

Physical examination showed a semicomatose woman with a pulse of 80 and a blood pressure of 120 systolic, 80 diastolic. The lungs were clear, and the abdomen soft without masses. The axillary hair was absent, and the public hair was scanty and of female distribution. The skin was pale, and the face expressionless. No abnormal pigmentation was seen. Knee and ankle jerks were absent. The blood sugar was 50 mg. per 100 cc. The patient became active and oriented immediately after an infusion of 10 per cent dextrose in saline solution.

Urine obtained after this infusion had a specific gravity of 1.018, with occasional red and white cells in the sediment. There were a+ test for albumin, a red sugar reaction and a++ test for acetone. Examination of the blood showed a red-cell count of 3,680,000, with 10.5 gm. per 100 cc. of hemoglobin, and a white-cell count of 11,400, with 91 per cent neutrophils. The nonprotein nitrogen was 19 mg., the protein 5.3 gm., and the cholesterol 236 mg. per 100 cc. and the chloride 92 milliequiv., the sodium 117 milliequiv., and the potassium 4.45 milliequiv. per litter. Corticosteroid excretion was 0.04 mg. in twenty-four hours. No 17-ketosteroids were detectable. Follicle-stimulating hormone (FSH) excretion was positive for 52 mouse units in twenty-four hours. Films of the skull were normal. X-ray examination of the chest showed a small heart and some calcification in the left hilar region and mediastinum. Plain films of the abdomen were negative. The basal metabolic rate was −8 per cent on one determination. An electrocardiogram showed a normal rhythm of 35, very small QRS waves in the limb leads, very low T waves in Lead 1 with slight late dip, inverted T waves Leads 2 and 3 and a prolonged systole measured by a QT interval of about 0.45 second.

The patient responded well to intravenous fluids and electrolytes, desoxycorticosterone acetate (DOCA), adrenocortical extract and testosterone. She was discharged after twenty-six days of hospitalization on a regime of DOCA, thyroid and added salt.

Third admission (three and a half years later). In the course of the next three years several minor crises were precipitated by upper respiratory infections, gastrointestinal upsets and an abscessed tooth, but all were treated sucessfully at home with increased amounts of DOCA and saline solution. During this period the patient developed progressive contracture of both knee joints. This admission was preceded by a brief period of confusion and one bout of vomiting after which she went into stupor. Physical examination showed a restless, disoriented woman with a hacking cough and temperature of 103.6° F. The systolic blood pressure was 85, and the diastolic was not obtainable. The lungs were clear, and the abdomen soft. Urinalysis was negative except for a few red cells and casts in the sediment. Examination of the blood revealed

a hemoglobin of 12.5 gm. and a white-cell count of 12,500, with 80 per cent neutrophils. The sodium on admission was 136.2 milliequiv., the potassium 4.6 milliequiv., and the chloride 103 milliequiv. per liter, and the sugar 109 mg., the nonprotein nitrogen 25 mg., and the cholesterol 174 mg. per 100 cc. Urine culture was negative. FSH excretion was positive for 13 mouse units in twenty-four hours. X-ray examination of the chest showed a density in the right middle lobe consistent with an infarct. Films of the pelvis disclosed degenerative changes about the right hip joint and around the symphysis pubis. The patient responded satisfactorily to penicillin, intravenous administration of dextrose in saline solution, DOCA and lipoadrenal and aqueous adrenocortical extract and was discharged after nine days on DOAC, methyl testosterone and sodium chloride.

Fourth admission (seven months later). The patient did moderately well until two days prior to admission, when she developed coryza followed by drowsiness, vagueness, thirst, anorexia and vomiting. Physical examination revealed a temperature of 98.6°F., a pulse of 88, respirations of 20 and a blood pressure of 98 systolic, 60 diastolic. There was a hacking cough productive of thick, white sputum, but the examination was otherwise negative. The blood sugar was 69 mg. per 100 cc., and the sodium 126 millequiv., and the potassium 4.7 milliequiv. per liter. An electrocardiogram showed essentially the same pattern as the previous tracings except that the QT interval had decreased to 0.34 second. The patient was given Crysticillin and the usual hormone therapy and was discharged improved on the seventh hospital day on increased dosage of DOCA and additional salt.

Final admission (two and a half months later). She did well until two weeks before the final admission, when she became drowsy and appeared to have deteriorated mentally. The blood pressure at this time was 90 systolic, 70 diastolic, and the sodium 127 milliequiv., per liter. She was thought to have been swallowing her DOAC tablets instead of taking them sublingually. She improved on intramuscular medication and increased salt (6.0 gm. a day for four days). She then developed edema, and salt and DOAC were omitted for three days. Six days before admission she had many visitors and complained of fatigue. On the following day she had an episode of fainting relieved by 10 cc. of 50 per cent glucose intravenously. The blood pressure was 120 systolic, 80 diastolic, and no DOCA was given, since edema persisted. Two days before admission the blood sugar was 52 mg. per 100 cc., and the serum sodium 117 milliequiv. per liter. On the following day she refused food and was given 500 cc. of 10 per cent dextrose in saline solution intravenously and 2 mg. of DOCA, and was placed on 1 cc. of lipoadrenal extract every eight hours. She improved, and ate well the rest of the day. On the morning of admission she vomited and was very drowsy.

Physical examination revealed a semicomatose woman with a temperature of 99.1° F., a pulse of 72, and respirations of 20. The blood pressure was 92 systolic, 60 diastolic. The right pupil was larger than the left, all extremities were somewhat spastic, abdominal reflexes, knee jerks and ankle jerks were absent, and there were bilateral Babinski reflexes.

The urine had a specific gravity of 1.026 and gave a++ test for albumin, a mustard-colored sugar reaction and a +++ test for acteone. The blood sugar was 121 mg., and the total protein 5.0 gm. per 100 cc., and the sodium 111 milliequiv., the postassium 4.2 milliequiv., and the chloride 82 milliequiv. per liter. The nonprotein nitrogen was 11 mg., and the blood urea nitrogen 3.8 per 100 cc. (both these values were checked). An elctrocardiogram showed a rate of 80 with a PR interval of 0.18 second. There was low voltage in all complexes of Lead 1 and of the QRS complexes throughout. The QT interval was 0.46 second. The T waves were up right in Leads AVR and AVL, flat in Leads 1 and V6, upright to inverted in Lead V3 and inverted in Leads 2, 3, AVF, V4 and V5, with low voltages in all Leads except V6.

In the twenty-two hours of the hospital course the patient received 2000 cc. of 10 per cent dextrose in saline solution, 300 cc. of physiologic saline solution and 700 cc. of 5 per cent dextrose in water, all intravenously, 140 cc. of aqueous adrenocortical extract intravenously and 10 cc. intramuscularly and 300,000 units of penicillin. The urinary output during this period was 575 cc. On the evening the first hospital day occasional ventricular premature beats were heard and moderate Cheyne-Stokes breathing began. Soon runs of 8 to 16 rapid beats appeared, and multifocal ventricular tachycardia was demonstrated by electrocariogram. During the episodes of tachycardia the respirations became deep and

stertorous, the eyes rolled up, and the patient became rigid without convulsive movements. Quinidine lactate, 0.05 gm., was given cautiously intramuscularly. The patient remained comatose throughout the night and the blood pressure ranged around 100 systolic, 60 diastolic. Twenty-one hours after admission she stopped breathing, and no heart sounds, pulse or blood pressure could be obtained. Then grunting respirations were noted at intervals of about forty seconds. One cubic centimeter of intracardiac epinephrine produced no change, and oxygen and artificial respiration were started. Electrocardiograms showed absent P waves and bizarre QRS complexes of 0.14 second's duration occurring irregularly with periods of asystole lasting up to 10 seconds and runs of ventricular tachycardia at 165 seconds. A mixture of coramine with caffeine sodium benzoate was given intracutaneously followed by 0.5 cc. of 20 per cent potassium chloride intracutaneously without improvement. Later 1 cc. of 20 per cent potassium chloride was given by vein, also without improvement. About forty-five minutes after the episode started the electrocardiogram showed only a few bizarre ventricular complexes, and then no evidence of heart action. The patient became cyanotic, and was pronounced dead.

KENT THAYER, M.D.

The first admission of this patient we will discard except to say she evidently had normally functioning endocrine glands.

At the age of 57 a diagnosis is made of Addison's disease for the following reasons,—(1) withdrawn personality is frequent in Addisonians. They have a diminution of intellect, loss of memory, apathy and depression. This is of utmost clinical significance in Addisonians for in about 70% of them a change of mood is one of the earliest signs of impending collapse or crisis. (2) Weakness and fatigue is usually a dominant symptom. (3) Loss of appetite even to the point of nausea and vomiting is characteristic, and when nausea or vomiting occurs crisis is near. (4) It is well known that any trauma, mental or physical is withstood poorly by Addisonians. This patient was finally thrown into crisis by dental extractions.

On admission a B.P. of 128/80 was found. This is somewhat against the text book picture, but is not too infrequent. The scanty axillary and pubic hair is characteristic and makes one consider either adrenal or pituitary insufficiency, or both. Our patient evidently had little pituitary disorder since there were 52 monometer of F.S.H., but the adrenal activity was very low with no 17 Ketosteroids being execreted. Pigmentation is present in 80 to 90% of Addisonians. This patient had none. Fasting blood sugar is low in crisis and glucose tolerance curve in Addisons is flat. It has been shown there is faulty absorption of sugar from the intestinal tract and also faulty utilization of glucose by the tissues and failure of storage of glycogen in the muscles and liver. Our patient on admission had blood sugar of 50 mg/100 cc. The urine usually is not of high specific gravity and our patient had 1.018 which is usual. However on later admission the specific gravity went to 1.027.

The sugar in the urine was due to the infusion of glucose.

Usually a patient in crisis has an elevated N.P.N. and urea nitrogen. I am unable to explain an N.P.N. of 19 and on later admission an N.P.N. of 11 and urea nitrogen of 3.8 unless it was due to malnutrition or liver disease.

It is usual for the serum sodium and chloride to be diminished and the decrease of sodium is a more reliable index than chlorides. However occasionally serum sodium is normal. Our patient had decreased sodium and chlorides on most admissions. Theoretically the serum potassium is elevated in crisis and decreases under adequate therapy. However this is not a reliable index, for many times this value is normal even when the sodium is extremely low.

The B.M.R. of —8, I believe means very little. Addisonians usually have —10 or lower which does not necessarily mean the thyroid is involved. The E.K.G. on admission is confusing. With a rate of 35 the QT interval every 45 sec. is too short and I believe there is a mistake in rate. If the 3 in 35 was supposed to be an 8, (since on admission the patient had a heart rate of 80) the QT interval is prolonged. The small QRS and inverted T in 2 and 3 is compatible with Addison Disease. There has been considerable discussion as to these change. Experimentally increased potassium will cause increased conduction time with high T waves. In hypokalemia there is evidence of intra ventricular block with inverted or flat T waves, and prolonged QT interval. These findings are common after treatment with Doca.

The thing that clinches the diagnosis is the

fact the patient responded promptly to specific therapy.

The next admissions of the patient seem to confirm our diagnosis. The patient had minor and major crises due to respiratory infections and dental infections.

Whether on the third admission this patient had an infarct in the lung or pneumonia, I do not know. The progressive contracture of the knees I am unable to explain unless it was due to position of keeping the knees flexed while at rest. The patient responded well to treatment on the third and fourth admission being discharged in 9 and 7 days respectively.

The final admission, which was 4 years, 3½ months after diagnosis of Addison's Disease, was rather characteristic with mental changes, weakness, low B. P., and slight lowered sodium and low blood sugar. The patient had been maintained on Doca and salt and developed edema, so these were discontinued, and the patient given glucose.

Doca is effective in only one phase of adrenal cortical failure and that is electrolyte balance, and has no effect on carbohydrate and protein metabolism. A severe Addisonian in crisis usually requires more than Doca to bring about a satisfactory response—that is adrenal cortical extract. This was given to our patient for one day and stopped. During that time she improved and then became drowsy and comatose. The neurological findings are suggestive of an intracranial lesion, probably vascular and I would suspect she had a right cerebral thrombosis. However, Sorkin states, "an increase in musclar tone is often present in adrenocortical insufficiency. This is sometimes associated with muscular rigidity, and pyramidal tract signs."

The EKG on this admission I believe is compatable with hypokalemia.

Potassium may be lost due to several causes—one of the most frequent causes is inability to eat followed by dehydration and then replacement with potassium free fluids, especially if there is abnormal gastrointestinal losses due to vomiting, diarrhea or suction. Another cause is transfer of K from inter celluler spaces to cells, such as occurs in diabetic acidosis with treatment with insulin. The potassium is utilized in the metabolism of glucose and is fixed in the cells, leaving a low serum potassium.

Administration of Doca as adrenal cortical extract or Cortisone causes an accelerated renal excretion of potassium. No mention of potassium containing fluids being given our patient is made until she was practically dead. Evidently they were going by the serum potassium level, which as said before is misleading. The EKG changes are probably the earliest evidence of hypokalemia. These changes may occur in other cardiac conditions, so must be interpreted according to the condition of the patient.

Patients treated with Doca over a long period of time may develop focal myocardial necrosis. This was found in 7 of 8 cases in one series treated with Doca and more in 11 cases who died before Doca was used. These same changes of focal myocardial necrosis can be produced in animals either by potassium deprivation or by excessive use of Doca.

My diagnosis: Addison's disease with crisis, and Hypokalemia.

GEORGE McKHANN, M.D.:

THE CASE OF THE SALTED LADY

This case puts me in mind of the man who had a bear by the tail, only this bear has so many tails. I tried to get Dr. Thayer to hold some of them while I held others, but no luck.

Miners speak of an artificially enriched gold mine as "salted." This case is full of the problems of salt. So the title this time is, "The Case of the Salted Lady." I believe Judge Dysart will agree that is one of the important points of this case. Never have I spent so many hours,—so very profitably—as on this case.

My last case lacked laboratory work-up, but this one kept the labs busy for years. Even to repeat their reports would occupy all of my allotted time, so I have attempted to tabulate the reports to save time. In table 1, attention is called to the very low NPN and urea, for which I can offer no explanation, to the absence of 17-ketosteroids, which if correct, indicates pituitary hypo-function, and to the chlorides, sodium, potassium, and to the sodium potassium ratio.

Obviously her attending physicians believed that she had Addison's Disease. They treated her successfully for that for over four years. With them I shall agree.

The symptoms of Adrenal Cortical Insufficiency are weakness, easy fatigability, abnormal pigmentation, weight loss and dehydration, hypotension and small heart size, anorexia, nausea, vomiting, diarrhea, dizziness and syncopal attacks, nervous and mental symptoms,

TABLE I

| | | | | | |
|---|---|---|---|---|---|
| | Age in years | 57 | 60½ | 61 1/12 | 61 7/24 |
| | Hospital Admission | 2nd | 3rd | 4th | 5th |
| | Hospital Days | 26 | 9 | 7 | 22 hours |
| Normal | Test | | | | |
| 20-40mg per 100cc | NPN | 19 | 25 | | 11 |
| 10-15mg. per 100cc | Urea | | | | 3.8 |
| 80-120mg. per 100 cc | Blood sugar | 50 | 109 | 69 | 52 |
| | | | | | 120 |
| 130-240mg. per 100cc | Cholesterol | 236 | 174 | | |
| 6-8Gm. per 100cc | Protein | 5.3 | | | 5 |
| −10 to Plus 10 | BMR | −8 | | | |
| | Hematocrit | | | | |
| Males 45% | | | | | |
| Females 43% | | | | | |
| 0.2 to 2mg in 24 h. | Urinary corticosteroids | 0.04 | | | |
| Female: 5-12mg. in 24 h. mean 10mg. | Urinary 17-Ketosteroids | 0 | | | |
| Male: 8-23mg. Mean 15mg. | | | | | |
| Female: 5-100 mouse units in 24 h. | FSH | 52 | 13 | | |
| Male: 5-30 | | | | | |
| 107 m.Eq. per liter | Serum Cl | 92 | 103 | | 82 |
| 142 m.Eq. per liter | Serum Na | 117 | 136.2 | 126 | 127 |
| | | | | | 111 |
| 4-5.4 m.Eq. per liter | Serum K | 4.45 | 4.6 | 4.7 | 4.2 |
| 32 | Na/K Ratio | 26.1 | 29.6 | 26.8 | 30.2 |
| | | | | | 26.4 |

changes in gonadal function and secondary sex characteristics, abdominal pain, constipation, salt craving, muscle pains, and symptoms of spontaneous hypoglycemia, such as hunger, headache, weakness, loss of initiative, sweating, trembling, emotional instability, negativism, dilated pupils, blurring of vision, diplopia, circumoral pallor, full pulse, irregular, shallow breathing, apprehension, disorientation, and unconsciousness with or without convulsions. These signs of hypoglycemia may appear with a blood sugar of 60 mg. per 100 cc.

The laboratory findings in adrenal cortical insufficiency are decreased serum sodium and chloride concentration, increased serum potassium and NPN (the increased NPN is due to renal failure), increased urinary sodium and chlorides and decreased urinary potassium, hypoglycemia and a flat oral glucose tolerance curve, hemoconcentration, decreased plasma and blood volume, low urinary 17-ketosteroid and corticoid excretion, small heart size on X-ray, low basal metabolic rate, abnormal electrocardiogram, abnormal electroencephalogram, X-ray demonstration of healed or active tuberculosis, increase in circulating lymphocytes, normal or high levels of circulating eosinophils, increased blood oxygen capacity, increased insulin sensitivity.

Today the diagnosis would have been confirmed by the epinephrine test for anterior pituitary adrenocortical integrity, by the ACTH test for adrenocortical reserve function, by the Robinson-Kepler-Power water test, and perhaps further proven by the induction of hypoclycemia, and the Cutler-Power-Wilder test of restricting sodium and chloride intake and increasing potassium and fluid intake. She certainly had ample proof of the response to therapeutic doses of desoxycorticosterone acetate, DOCA.

The differential diagnosis of adrenal cortical insufficiency includes neurasthenia, chronic infections such as tuberculosis and brucellosis, chronic intestinal disease, myasthenia gravis and chronic thyrotoxic myopathy, renal insufficiency of the salt losing type, hyperparathyroidism, and spontaneous hypoglycemia.

Symptoms, signs, and laboratory findings of adrenal cortical insufficiency our patient had. Her course might almost be said to be classical, including the progressive contractures of both knee joints on treatment, the paralyses, and the recurrent crises following infection and trauma.

I am reminded that we in Arizona should be

TABLE II

THE EFFECTS OF POTASSIUM ON THE ELECTROCARDIOGRAM

Barring cardiac disease the electrocardiogram is normal with a normal serum potassium. Normal serum potassium ranges from 4 to 5.4 milliequivalents per liter, or 16 to 21 mg. per 100cc.

Hypopotassemia causes these changes in the electrocardiogram, in a relatively progressive manner depending on the degree.

1. Prolonged QT with a broad T wave.
2. Lowering or inversion of T.
3. Depressed S-T at about 1.5 milliequivalents.
4. Occasionally a prolonged P-R, and a U-wave may appear. Myodegeneration and pulmonary congestion occur at this stage.

Hyperpotassemia causes changes that are somewhat the reverse of those caused by hypopotassemia.

1. Tall, peaked T waves at about 7.8 milliequivalents.
2. Lower R waves.
3. Absent P waves.
4. Prolonged QRS.
5. Depressed S-T.
6. Biphasic QRS and T waves with death near, and the serum potassium at or above 10 milliequivalents.

Other myocardial disease may complicate these patterns and limit their usefulness.

unusually alert for such cases by a recent autopsy. This man had had tuberculosis of the lungs nearly thirty years ago, and died recently of other causes. At autopsy the pulmonary scars were difficult to find, but both adrenals contained several tuberculomas as large as one centimeter in diameter.

The treatment of chronic adrenal cortical insufficiency involves replacement of the deficient hormones so far as possible. This may be done by using aqueous adrenal cortex extract, or the lipo-adrenal cortex, but these are very expensive. So DOCA has been used in the past. DOCA has regulated salt metabolism and thus prolonged life, but has not always returned the patient to a normal state as regards energy, because of the failure to improve carbohydrate and protein metabolism. Today the use of cortisone adds another weapon to our armamentarium,—a weapon which was not available to our patient. Its use would have simplified the treatment. One does wonder about the use of cortisone in tuberculosis of the adrenals.

On her last admission she developed evidence of recurrent lack of cortical hormone, probably because she had been swallowing her DOCA. She also showed evidence of neurological lesions which at her age may have been arterio-sclerotic cerebro-vascular lesions, but much more likely were due to a relative hypokalemia with paralysis similar to that seen in familial periodic paralysis, for such does develop in adrenal cases. Or she may have had both arterio-sclerosis of the cerebral vessels and hypopotassemia, and also some disease of the pituitary gland.

The first electrocardiogram of her final admission was consistent with a low serum potassium with S-T-T wave changes and a QT ratio of 1.31, much prolonged. Or else she had both anterior and posterior wall myocardial ischemia, or damage. Such myodegeneration may occur with a very low serum potassium, and leave irreversible changes and even scars.

She was given saline and dextrose to a total of 3000 cc plus 140 cc of aqueous adrenal cortical extract in 22 hours with the excretion of only 575 cc of urine. This was evidence of renal failure.

The normal serum potassium is about 4.5 m.Eq. per liter, but the normal intra-cellular potassium is 115 m.Eq. per liter, which is about 23 times that of the serum. The metabolic balance between these two is very delicate, and shifts may occure quite rapidly. The serum potassium may be increased by increased intake of potassium, oliguria and anuria, tissue breakdown or anoxia, contraction of extra-cellular volume by dehydration, and adrenal cortical deficiency. Exercise, anoxia, and agonal states will send potassium out of the cells, probably due to injury to the cells, into the serum. Several of these factors were present terminally in our patient.

The agonal state and the anoxia dumped intracellular potassium into the blood. The renal failure prevented its excretion, resulting in hyperpotassemia, and cardiac poisoning by the potassium, as evidenced by the ventricular ectopics, absent P-waves, bizarre QRS' of 0.14 second duration with periods of asystole, and finally ventricular tachycardia and fibrillation. Accord-

ing to the last electrocardiogram the serum potassium must have been close to or above 10 m.Eq. per liter. Death results at about that level. Of course a coronary occlusion might also have been responsible for that last electrocardiogram. So a coronary occlusion may be the "nigger in the wood pile." But she had no pain suggestive of such.

She was given Coramine and Caffiene Sodium Benzoate, and of all things with these electrocardiographic findings (which are quite consistent with the last stages of cardiac potassium poisoning), 0.5 cc of potassium chloride 20% solution intra-cutaneously and then 1 cc of 20% potassium chloride I.V., a total dose of 300 mg., but with no improvement. Estimating her extracellular fluid volume at 14 liters (it probably was less), this dose added about 0.7 m.Eq. per liter. Then the electrocardiogram showed only a few bizarre ventricular complexes, then after 45 minutes the heart stoped, cyanosis appeared, and ..... She died of Potassium Poisoning of her myocardium. The last medication assured her death. Better to have given her oxygen, glucose but no saline, plasma, blood, cortisone, and adrenalin which might have transferred extracellular potasium into the cells, or re-established renal function to aid its excretion.

My diagnosis is Chronic Adrenal Cortical Deficiency with death due to Potassium Poisoning as proven by the last electrocardiogram. As a weak hedge, I would name as second choice arterio-sclerosis, coronary disease with coronary occlusion as the actual cause of death in a patient suffering from Chronic Adrenal Cortical Deficiency.

Dr. J. H. Means*: This is the case of a woman with a chronic malady, which I am sure was mainly one of insufficiency of the adrenal cortex and was characterized by a series of episodes that seemed to be fairly classic Addisonian crises and finally a fatal one. The problem, as I see it, is not whether she had adrenocortical insufficiency but rather what kind it was, whether it was primary or secondary, what it was due to and what else if anything she had.

I shall comment on certain items in the record first. At the age of fifty-four, seventeen years after the first admission, the patient apparently had a personality change. She developed a craving for sweets, which I suppose may have been a symptom of hypoglycemia. About two weeks before the second addmission, she had a series of dental extractions, which in any patient who has insufficient adrenocortical function might precipitate a crisis. On the morning of that admission she had an episode similar to the crises seen in patients who have proved adrenal insufficiency. At that time there was a slight leukocytosis. The fact that the urine contained sugar may have been connected with the infusion of dextrose; I cannot explain the acetone. The low corticosteroid secretion and absence of 17- ketosteroids were both strongly in favor of practically no adrenocortical function. FSH excretion was suggestively high; electrocardiographic findings were similar to those seen in hypothyroidism or hypoadrenal function. There was a small heart, which is a characteristic finding in Addison's disease. The normal blood pressure is a little troublesome from the point of view of my theory.

At the third admission the FSH was 13 mouse units in twenty-four hours, which Dr. Albright tells me is not low. That is very important. There was x-ray evidence of a pulmonary infarct, but nothing in the history suggesting the legs as a source, although they are often involved.

Could we see the x-ray films?

Dr. Stanley M. Wyman: These are the original films, showing clear lungs; the heart shadow appears to be well within normal limits.

Dr. Means: You mean it is not larger than normal. Do you think it is smaller than normal?

Dr. Wyman: I am very hesitant to say that.

Dr. Means: What about the sella turcica?

Dr. Wyman: The sella turcica seems normal; the clinoid processes show no erosion, and there are no abnormal calcifications in the region. On films taken a few days after the original chest films, the heart appears a little larger. A shadow in the right lung is seen overlying the right hilus and appears to lie well forward in the chest. It is perfectly consistent with an infarct or with atelectasis. There is no evidence of calcification above the kidneys in the region of the adrenal glands.

I do not think there is anything of importance about the degenerative changes reported in the hip joints and symphysis other than those we commonly encounter.

Dr. Means: Thank you very much. I might just point out in my defense that some other radiologist must have called this a small heart. Just to stick my neck out a little farther, I am

*Chief, Medical Service, Massachusetts General Hospital.

going to guess that the heart weighed less than normal.

During the last admission the patient had albuminuria, but I do not believe she had any important renal lesion. Tests for sugar and acetone were positive in the urine, and the blood sugar was somewhat high so that one wonders if there were bizarre electrocardiographic changes, and I should like to have an electrocardiographer tell us what light these changes throw on the electrocardiogram.

Dr. James H. Currens: The electrocardiogram during the last admission was very bizarre. It was my impression that it was consistent with but not necessarily diagnostic of a deficiency of intracellular potassium. The electrical systole as manifested by the QT interval was prolonged, and there was significant depression of the RST segments as well as the T waves. The QRS interval was also increased. I should like to point out the fact that somewhat similar changes in the electrocardiogram have been noted in rats dying as a result of potassium deficiency—that is, in animals maintained on a potassium-deficient diet. The normal serum potassium is not necessarily disturbing since correlation between electrocariographic changes and serum potassium levels is nil at times.

Dr. Means: I shall say this for my diagnosis, that the chief factor was adrenocortical insufficiency and the chief differential diagnosis, it seems to me is between Addison's disease and Simmond's disease or its subspecies, Sheehan's disease. One wonders about the significance of that hemorrhage after dilatation and curettage. Sheehan's disease is found in women who have severe post-partum hemorrhage followed by infarction of the pituitary body and panhypopituitarism. This patient did not have a post-partum hemorrhage but a hemorrhage from the uterus after a dilatation and curettage. Sheehan[1], in his paper, makes no mention of this type of syndrome developing after any hemorrhage other than post-partum hemorrhage. Several years later the patient had a perfectly normal menopause, which practically rules out Simmond's syndrome. However, to my way of thinking, the absence of pigmentation favors a diagnosis of adrenocortical insufficiency secondary to pituitary failure. In primary Addison's disease pigmentation occurs in over 95 per cent of the cases, and there is probably a higher incidence in fatal cases. Of course there are panhypopituitarisms other than Simmond's disease, such as those caused by a tumor impinging on the pituitary body or any of the other things that may destroy the pituitary body or reduce its function. Since there is no evidence of a pituitary lesion, however, I am very skeptical about a primary pituitary source for this syndrome.

There was only one determination of the basal meabolic rate, which was –8 per cent. Dr. George Thorn tells me that in most cases of classic Addison's disease, the basal metabolic rate is around –20 per cent. One would expect an even lower rate in Simmond's disease. Of course, one test is not very important.

The normal to high FSH, it seems to me, practically excludes hypofunction of the pituitary body; therefore, I am forced to say that this was primary Addison's disease and I do not know why there was no pigmentation. If it was primary Addison's disease, which kind was it? Was it primary atrophy or tuberculosis of the adrenal glands? I do not believe there is very much in the record to suggest tuberculosis,—the x-ray films do not show any,—so that I would favor the atrophic variety of Addison's disease.

Now the question arises, were there any other endocrinopathies here? I just do not know about the thyroid gland. Thyroid was given to the patient so she was considered to have been mildly hypothyroid. There is nothing that I can see that would justify my saying that she had any hypothyroidism. Toward the end there was a little flock of items that suggested that she might be getting diabetic but I cannot really say that she was. I think that Dr. Mallory found atrophic to absent adrenal glands, a normal pituitary body and probably a normal thyroid gland. I cannot say that he found anything else except a small heart. I think that is as far as I can go.

Dr. Reed Harwood: I would like to add to the information in the record that she did look like a patient with myxedema.

Dr. Means: Why should she have had my myxedema with Addison's disease? She should not. She may very well have had myxedema with Simmon's diseases, of course. Yet I cannot for the life of me see how she could have had Simmonds's disease with this normal menstrual story, normal menopause and the normal to elevated FSH secretion. It just does not make sense as far as my meager knowledge goes.

Dr. Harwood: I would like to point out that

the patient went four years without any hyopglycemia, and then it gave her quite a little trouble during the last month of her life. I should like to ask Dr. Albright why it was that she could be brought out of her crises for a long time and then suddenly did not respond at all.

Dr. Means: There might have been some infection, I suppose, that made her more resistant to treatment.

Dr. Fuller Albright: I cannot answer Dr. Harwood's question. This patient belongs to a group of about 5 patient we have seen in whom there were all the symptoms and findings of panhypopituitarism except that the FSH was normal. We rather think that the hormones of the pituitary body except the FSH come from the eosinophil cells. We believe that in these cases there is a lack of eosinophil cells and normal basophils. This is the first autopsy that we have had in any of this group, and we are very anxious to see if the eosinophils have all disappeared.

Dr. Jacob Lerman: I would like to ask Dr. Means if he places any emphasis on the drop in FSH of 52 to 13 mouse units? Does that perchance mean a progressive destruction of the pituitary body? The first one mentioned was 52 mouse units. We assume that the highest positive dilution is recorded.

Dr. Albright: There is no evidence that there was a drop in the FSH titer. The first test was "positive for 52 mouse units per day", and the second was "positive for 13 mouse units per day". The second test was not assayed for 52 mouse units and might have been positive at this level.

Dr. Harwood: I understand myself that the FSH was not quite as strongly positive on the second determination.

Dr. Albright: I did not say that the FSH test was not high; it was not low for the normal mature woman. It may have been low for the postmenopausal woman.

Dr. Means: I am placing a great deal of weight on the FSH. If there is something phony about that, my argument falls to the ground.

Dr. Andries Querido: If this patient really was myxedematous, with Addison's disease, I think one would have to consider biglandular disease with a normal pituitary body. The one such case I have seen was strongly pigmented. I think that the absence of pigmentation may be an argument against a normal pituitary body in this case.

Dr. Frederic C. Barter: I wonder if possibly some of the difference was due to the fact that she was not hypothyroid during the entire time but only during the last months.

Dr. Lerman: Falta (2) has described patients with biglandular disturbance, Addison's disease and myxedema, but in those cases I think, as Dr. Querido said, there was pigmentation.

CLINICAL DIAGNOSIS

Panhypopituitarism.
Addison's Crises.

DR. MEAN'S DIAGNOSIS

Addison's disease, atrophic type.

ANATOMICAL DIAGNOSIS

*Atrophy of anterior lobe pituitary body, severe, with hypopituitarism.*
*Atrophy of thyroid gland and adrenal cortex, secondary.*
Alopecia, Axillary.
Pulmonary tuberculosis, apical, bilateral, healed.

PATHOLOGICAL DISCUSSION

Dr. Tracy B. Mallory: Autopsy on this patient showed atrophy of three endocrine organs—the pituitary, the thyroid and the adrenal glands. The pituitary body showed a minute crescent of anterior lobe, perhaps 10 per cent of normal volume, surrounding an apparently normal-sized posterior lobe. Sections of the pituitary gland at autopsy are often very difficult to interpret because of postmortem changes. I thought both eosinophils and basophils were markedly decreased and that the chromophobes made up the bulk of the persisting glandular tissue. Material was sent to Dr. A. E. Severinghaus, of New York City, because of his expert knowledge of pituitary cytology. He agreed that the eosinophils were markedly decreased but believed that there was only a slight reduction in the number of basophils. I have no doubt he is correct, and therefore Dr. Albright can consider his hypothesis vindicated.

The thyroid gland weighed only 5 gm. and showed extensive atrophy and fibrosis and comparatively little inflammation. The two adrenal glands together weighed 5 gm. and were almost paper thin. The medulla was relatively well preserved. The cortex showed very marked atrophy, with almost complete lipoid depletion. There was also extensive fibrosis in the adrenal glands but no evidence of any inflammatory process. In the lungs small scars of old tuber-



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*Hamilton, H. E., and Zavala, D. C.: Amebiasis in Iowa: Diagnosis and Treatment, J. Iowa M. Soc. 42:1 (Jan.) 1952.

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culosis were found at the apexes but nothing active, and there was one fibrotic lesion that was consistent with a healed infarction. The heart was small, weighing 260 gm. That is not extremely small, however, for a small woman.

Dr. Means: It was, however, somewhat small. What was the weight of the pancreas?

Dr. Mallory: The pancreas weighed 60 gm., which is considerably less than normal, but microscopically was not very striking in appearance. One hyalinized island of Langerhans was found. The majority of the islands looked quite normal. There was no fibrosis or fat infiltration.

Dr. Querido: The interesting point here is the question of the etiology of this disease. If one has to stick to the definition of Sheehan, the patient should not have had anterior lobe insufficiency. It might be that this case was similar to those described by Falta2 that have occasionally appeared in the literature. She may have had a multiglandular fibrosis, and the hemorrhage had nothing to do with it. This would be the first case as far as I know studied with modern endocrinologic methods.

Dr. Mallory: One of the difficulties with accepting severe hemorrhage and shock-like states as the etiology of hypopituitarism is the very marked predilection of the disease for females, whereas males suffering traumatic injury—battle casualties, for instance—suffer as profound states of shock, as any pregnant female ever suffered, and yet a pituitary insufficiency rarely, if ever, develops. So far as the Falta syndrome is concerned, it assumes a simultaneous sclerosis of several endocrine glands. His cases were studied only clinically without confirmatory anatomic checks, and therefore his theory is only an unproved hypothesis.

REFERENCES

1. Sheehan, H. L. Simmonds's disease due to post-partum necrosis of anterior pituitary. Quart. J. Med. 8:277-309, 1939.
2. Falta, W. Die Erkrankungen der Blutdrusen. Berlin: Julius Springer, 1913. Pp. 363-373.

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## AN URGENT REQUEST

The hands of your State Health Department are tied so far as effective control of communicable disease is concerned unless we have the whole-hearted cooperation of every physician in the State.

We recently sent out a letter emphasizing the importance of accurate reporting. For two or three weeks after this letter, reporting reached an all time high of 60% of the practicing physicians. This week, however, the figure has dropped back to 53%.

In a recent week our reports showed that 58% of the M.D.'s reported, while 69% of the Osteopaths reported during the same period.

This is a season of the year when most communicable diseases are at their height, so accurate reporting is all the more necessary in order that we may be ready to give whatever assistance is necessary.

Again we earnestly request your whole-hearted cooperation in this important matter.

C. G. Salsbury, M.D.
Director of Public Health

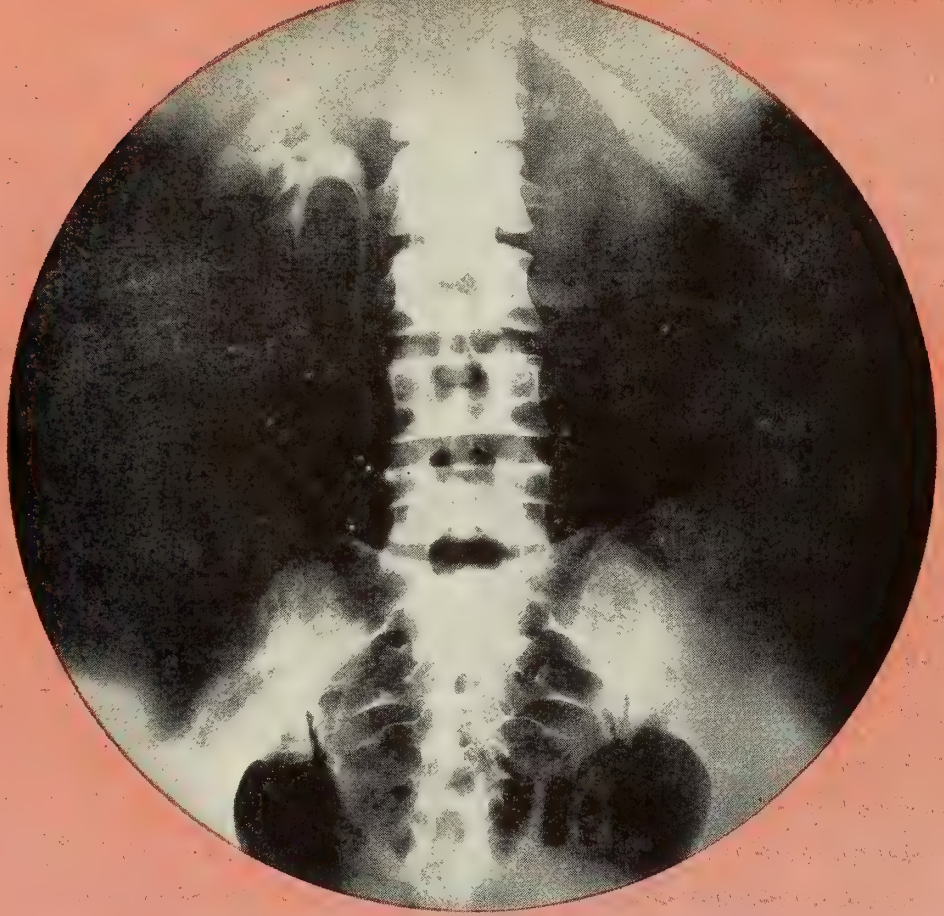
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## 5th ANNUAL MID-WINTER RADIOLOGICAL CONFERENCE

The 5th annual mid-Winter Radiological Conference will be held at the Ambassador Hotel, Los Angeles, California, on Saturday and Sunday, February 21 and 22, 1953. A banquet preceded by cocktails will be held at the Ambassador Hotel, on Saturday evening, February 21. Hotel reservations should be made as soon as possible through the Convention Manager, Ambassador Hotel, Los Angeles. The out-of-state speakers will be Dr. Fred J. Hodges, Dr. H. Dabney Kerr and Dr. Ira H. Lockwood.

Conference reservations may be made through Dr. M. M. Haskell, 615 Times Building, Long Beach 2, California. The Conference fee is $20.00, and dinner will be $6.00 per plate.

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# The PRESIDENT'S Page

## THIS IS YOUR JOURNAL

THOMAS H. BATE, M. D., PRESIDENT

ARIZONA STATE MEDICAL ASSOCIATION

IT IS WITH EXTREME REGRET THAT WE ANNOUNCE THE RESIGNATION FROM THE EDITORSHIP OF THIS JOURNAL OF DR. FRANK MILLOY. UNDER HIS ENERGETIC AND ABLE MANAGEMENT HAS GAINED IN STATURE UNTIL IT IS NOW RECOGNIZED AS ONE OF THE OUTSTANDING STATE MEDICAL JOURNALS.

TO FILL THE SHOES OF RETIRING EDITOR, DR. R. LEE FOSTER OF PHOENIX WAS APPOINTED TEMPORARY EDITOR OF ARIZONA MEDICINE. DR FOSTER HAS BEEN ON DR. MILLOY'S STAFF FOR A GREAT MANY YEARS AND IS THOROUGHLY FAMILIAR WITH ALL THE MECHANICS AND OPERATIONS OF ARIZONA MEDICINE.

IT IS OUR PURPOSE TO SEE THAT ARIZONA MEDICINE CONTINUES TO GROW AND IMPROVE. TO DO THIS WE MUST HAVE YOUR COOPERATION. THIS IS YOUR JOURNAL. IT BRINGS YOU MEDICAL NEWS OF ARIZONA, SOCIAL EVENTS IN MEDICAL CIRCLES AND EXCELLENT SCIENTIFIC PAPERS. THERE ARE PROBABLY OTHER SECTIONS WHICH YOU MIGHT LIKE TO BE DEVELOPED, PERHAPS EVEN SOME YOU MAY WISH TO BE DELETED. THE EDITORIAL STAFF IS WILLING, EVEN ANXIOUS TO PATTERN THE JOURNAL ALONG THE LINES YOU WISH. SEND THEM YOUR SUGGESTIONS. THIS IS YOUR JOURNAL. LET'S HELP MAKE IT INCREASE IN IMPORTANCE.

# Editorial

ARIZONA MEDICINE

*Journal of*

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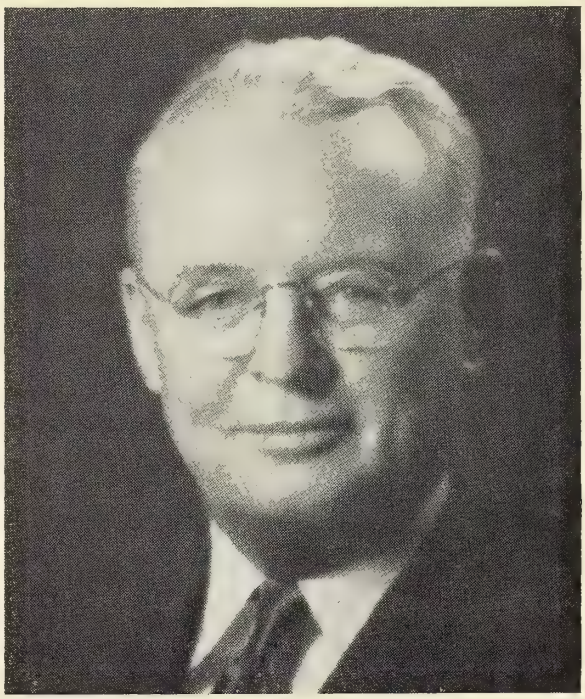
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## CONTRIBUTORS

The Editor sincerely solicits contributions of scientific articles for publication in ARIZONA MEDICINE. All such contributions are greatly appreciated. All will be given equal consideration.

Certain general rules must be followed, however, and the Editor therefore respectfully submits the following suggestions to authors and contributors:

1. Follow the general rules of good English, especially with regard to construction, diction, spelling, and punctuation.

2. Be guided by the general rules of medical writing as followed by the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION. (See MEDICAL WRITING by Morris Fishbein.)

3. Be brief, even while being thorough and complete. Avoid unnecessary words. Try to limit the article to 1500 words.

4. Read and re-read the manuscript several times to correct it, especially for spelling and punctuation.

5. Submit manuscript typewritten and double-spaced.

6. Articles for publication should have been read before a controversial body, e.g., a hospital staff meeting, or a county medical society meeting.

The Editor is always ready, willing, and happy to help in any way possible.

## "A GOOD AND FAITHFUL STEWARD"

Just about this time of the year, ten years ago, the Council of the Arizona State Medical Association drafted Dr. Frank J. Milloy to serve as secretary of the Association. This was in the midst of the presidential term of Dr. E. Payne Palmer, Sr., when the secretaryship was vacated by the enforced resignation of the secretary elected at the 1942 meeting of the Association. Dr. Milloy, a very busy internist, accepted the urging of the Council to take over the heavy responsibilities of this important office and for the past ten years has rendered an outstanding service to the medical profession of the state. In spite of the employment of a full time executive secretary and other office help for the details of the ever enlarging affairs of the Association, the duties of the elected secretary have grown through the years and have been faithfully and efficiently carried on by Dr. Milloy.

When Southwestern Medicine, the official organ of the Association, suspended publication with the December, 1943, issue, owing to war conditions, our Association was left without a medium of communication to its membership and for the publication of its scientific material. Little time was lost by the Council in launching ARIZONA MEDICINE, which began publication in January, 1944. Dr. Milloy accepted the added responsibility as Editor-in-Chief of this journal, organized an able editorial staff, secured efficient business management, and has made

our journal one of the outstanding state medical magazines of the country, in appearance, in editorial policies and in quality of material published.

It will be with deep regret that the medical profession of the state accepts the decision of Dr. Milloy to relinquish this dual responsibility. Ten years of voluntary service is quite a little to expect of one man, and it is with gratitude to him that we look back over those years of faithful administration during the trying period of war and the postwar years of readjustment of our affairs to a rapid growth of our state in population and just as marked and rapid increase in the numbers of medical men entering into practice in Arizona.

We thank you, Frank, for your efficient discharge of the duties entrusted to you, as a "good and faithful steward."

W. Warner Watkins, M.D.

———o———

## "BIG SHOES"

Dr. W. Warner Watkins who wrote the above tribute to Dr. Milloy knows whereof he speaks. He has formerly served both as Secretary of the Association and as editor of Southwestern Medicine and understands perhaps as no other man the problems faced by and the demands made on Dr. Milloy in his years of devoted service. I do not presume to add to what has been so well said but do reiterate our gratitude for a job so well done.

It is with many misgivings that I take up the task which Dr. Milloy has felt he must lay down. I'm fearful as I review the fine work he has done and also the excellent record of Dr. Watkins before him. Metaphorically these men wear big shoes. I cannot promise to carry on the work as well as they have done, but I can and do promise to try. To that end I covet your cooperation. I pray that you will be patient with me, forgiving my errors and helping me with your suggestions.

This journal is yours. Will you help me to make it speak for you? I'm rolling up my sleeves; and *you*—? Now,—let's "have at it"!

R. Lee Foster, M. D.

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## WARNING

### YOUR CONTRACT OBLIGATION MALPRACTICE INSURANCE

The attention of all physicians is directed to the terms of your malpractice insurance coverage. Your policy is a binding contract between YOU and the INSURANCE CARRIER. It is incumbent upon YOU on the first pretext of a possible malpractice claim to immediately notify your insurance company, either direct or through your agent, informing him of the circumstances.

Recently, we came upon a case wherein the insurer, while determining to defend the suit for the insured, reserved full right to deny any liability for any judgment which might be rendered because of such breach of policy provision. It so happened that a patient was attended in December of 1947. In the fall of 1948 the husband of the patient saw the attending physician and made a specific demand for $5,000 in settlement of his grievance. The physician advised the complainant that, in his opinion, there was nothing to settle. At this point he should have promptly notified the insurance carrier of a possible claim. However, he took no further action until he was served in December, 1949, with notice of suit filed and not until January, 1950, did he notify his insurer. The reason for this requirement is obvious—to allow the insurer to make an immediate investigation, contact any and all witnesses then living for the purpose of obtaining testimony and thereby possibly avoid what might otherwise develop into a case of more serious proportions with the passing of time. Fortunately, in this instance, the delay in reporting the potential claim did not result in any prejudice to the insurer as the attorney succeeded in securing a verdict for the defendant.

It would be well for each physician to thoroughly acquaint himself or herself with the provisions of his or her malpractice insurance contract and thus avoid possible misunderstanding and additional expense.

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## MOTION PICTURES

The Committee on Medical Motion Pictures of the A.M.A. has asked me to transmit the following notice for release in your journal:

The Committee on Medical Motion Pictures has announced the publication of a new revised film list which includes 78 medical films not readily available from other sources.

This list will be available for distribution after December 1, 1952. A copy may be obtained by writing the Committee on Medical Motion Pictures, American Medical Association, 535 N. Dearborn Street, Chicago 10, Illinois.

# TOPICS OF *Current Medical* INTEREST

## RX, DX, AND DRS.

By GUILLERMO OSLER, M. D.

An odd experiment with unexplained results was performed on a group of 'fortunate' U. of Cincinnati medical students by Dr. R. C. Muehrcke of the General Hospital. . . . Each student ate 1½ pounds of RAW CALVES' LIVER daily for 4 weeks. An EOSINOPHILIA occurred which lasted from 2½ to 3 years, and which was accompanied by a notable good health and freedom from disease. . . . Cooked liver, raw beef liver, and 35 different liver extracts were not similarly effective. . . . The relationship to diseases and glands is still speculative, tho interesting.

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**How many readers know the LEGAL LIMITS OF A DEBT? How long can you let a bill go without collection? . . . Back in Indiana it was 6 years (Too late in Arizona, Doctor!) Well, in Illinois it was five. (Still too late here.) . . . In Arizona the LIMIT IS 3 YEARS, and any debt is outlawed thereafter. Repeat, 3 years. . . . The limit varies from 2 years in Texas to 8 years in Wyoming.**

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INTESTINAL SYMPTOMS which follow the ingestion of certain foods may not be the result of an allergy, tho the possibility has been rightly emphasized in the October ARIZONA MEDICINE. . . . Dr. Lowell Goin has reported (in RADIOLOGY) that the guilt which follows the intake of a forbidden food (such as pork by a Jewish woman) may result in psychosomatic intestinal symptoms and x-ray signs. Ground pork, given without knowledge, produced no emotional or physical reaction at all.

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**Charles Cowan lives in Anaheim, California. This is the same town which has been made somewhat well-known by Jack Benny, whose railroad trains always go thru "Anaheim, Azusa, and Cucamonga!" . . . Mr. Cowan has his own claim to fame. He was the first person in the United States to receive INSULIN, and the first to change to a special CH diet. Furthermore, he is 84 YEARS OF AGE.**

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The newest trade-preparation ANTIBIOTIC is 'Erythrocin', of the Abbott Laboratories, It will more than likely come into some use. . . . Investigation has shown it to have a low toxicity; rare G.-I. disturbances from oral administration; and a specially good effect against gram positive organisms. . . . The last mentioned is of value in a world which seems populated with penicillin-resistant strains. . . . Its origin is Streptomyces erythreus, and Erythrocin is the Abbott name for erythromycin. A special coating protects the tablets from gastric digestion. . . . The research groups contain the names 'Finland' and 'Herrell', which are good signs.

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**The American Ass'n. for Thoracic Surgery (San Francisco, March 27-30, 1953) always has a large number of non-member auditors. This spreads the information around, but the members often find no place to sit. . . . It is too late to suggest a remedy for 1953, but here is a possibility for later, — schedule all papers for 8 A.M., and title all topics on esophageal surgery. They could then hold the sessions in a coffee-shop.**

**If the name Samson (Sec'y. of AATS) is familiar to constant readers of this journal, then Dr. H. Brodie Stephens (Chairman of reservations) should also be well known — especially if you follow football. Brodie caught the famous 'long pass' from Dr. Brick Muller in a Rose Bowl game against Ohio State some twenty years agone. . . . Dr. Delbert Secrist of Tucson could give details on the game, since he played in the Bowl a year from that time on a W. and J. team.**

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The public prints tell of two Boston doctors (one probably named White) who have followed 100 patients with chronic HIGH BLOOD PRESSURE for as long as 34 years. Seventy one patients are still living and only 5 are seriously handicapped. . . . The same magazine summarizes the statistics on CHLOROMYCETIN. Over 8,000,000 patients have received the drug. At least 72 deaths from aplastic anemia are known. The F. & D. A. says the drug may still be used; a warning leaflet is to be sent with every package; and it is to be used only when its risk must be taken (typhoid). Brucellosis, spotted fever, and typhus have other, safer therapeutics.

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**About four years ago this journal contained an editorial on 'ARIZONA AND THE WEATHER'. The engineering and commercial consultants who supplied the technical information on AIR-CONDITIONING agreed that refrigeration cooling was the ideal future method. Ideal but expensive, and definitely of the future. . . . A room-conditioner then cost about $350 to $450, and it was said that the cost would not decrease more than 10% or so. We believed that the cost would come down more than that, what with mass production, a probable demand, etc. . . . Now we find air-conditioning is to be the imminent big business. And an announcement has just arrived of a new conditioner which cools, dehumidifies, and circulates at a cost of $229. . . . We should have made a bet with that engineer.**

Bauer and Black are pleased with the results obtained from the routine use of ELASTIC STOCKINGS in the Mass. Mem. Hospital. . . . They apparently prevent pulmonary embolism from the legs, a cause of death in 34,000 patients per year in the U. S. . . . Litter and Wood report the progress of 2,500 patients who wore elastic stockings and an equal number who wore stockinette. There were 4 fatal cases among the controls, none in the treated group; there were 12 non-fatal cases among the controls, 2 in the treated group. . . . P.S., Bauer and Black sells the stockings.

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**Dr. Walter Alvarez gently sprinkles cold water on the B. F. Sieve report of a method of FERTILITY CONTROL. . . . A series of 298 women were supposed to be prevented from conception by regular oral doses of phosphorylated hesperidin. Dr. Alvarez cautions against too early acceptance on the following points,—it was only one fast, brief series; previous usage in mice was not a success; other species were not used; the theory is not an accepted one; the auspices or connections were not well known; one man can become enthusiastic; the work has not been repeated; the results are too nearly 100%; and 600 people could hardly be found who would take their pills without fail!**

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The prize article on FEE-SPLITTING is a humorous one from 'Medical Economics' by Dr. Theodore Kamholtz. In the manner of Spooner, he splits words, until it is almost impossible to intentionally say them right. . . . He says that when tension and tempers are not high, one talks of FLEE-SPITTING. If the argument becomes warmer, it can be called SPLEE FITTING, or even FIT SPLEEING. If discussors get to the shouting stage, they may arrive at SPIT FLEEING. . . . The humorist then tinctures his good idea with a few barbed shafts at the medical people who do or do not spit flees—flit splees—.

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**Like old soldiers (who simply fade away), a contemporary of ARIZONA MEDICINE in California is quietly folding in October. . . . The 'Annals of Western Medicine and Surgery' has been quoted in this column at intervals, and has done a good job in presenting research reports from the Los Angeles area. It was published by the County Medical Ass'n. . . . The only distress rocket was sent up by the editor, who claims that the junking was not necessary.**

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Here is a brief story, not uncommon, which shows the gap between a LAYMAN'S CONCEPT and a PHYSICIAN'S INTERPRETATION. . . . "Yes, poor Gloria is dead. She had a tooth pulled, and then had trouble with her jaw. After that she got an infection of her nervous system and was in the hospital for $3,000. They tried all sorts of drugs, and I think only 'chloromycin' worked. Her bone marrow softened. She went to her home town and they said she had leukemia and she died in two weeks". . . . Intriguing to speculate on the exact drug and diagnosis.

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**PULMONARY CONCENTRATION OF PENICILLIN has become important with the finding that one form of the drug loves the lung. . . . 'Neo-Penil' of Smith, Kline, and French is penethamate hydriodide (penicillin G diethylaminoethyl ester hydriodide). It concentrates in certain body tissues and fluids, especially in the lungs and bronchial secretion where it may be 5 to 10 times as concentrated as in the blood, and as much higher than benzylpenicillin (G). . . . Very little work has been published on the effects, but the therapeutic and prophylactic value is obvious and probable. . . . The ill, the aged, and the post-operative should especially profit.**

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Sir William Osler, a strictly literary relation of Guillermo, once urged the use of 'DAYTIGHT COMPARTMENTS' as a way of living. . . . The idea is intriguing,—live from day to day; do not worry about what is ahead; stop looking back over the shoulder. . . . Probably even Sir William would not restrict the 'cells' too rigidly, since what would happen to hospital insurance, and to pathologists!

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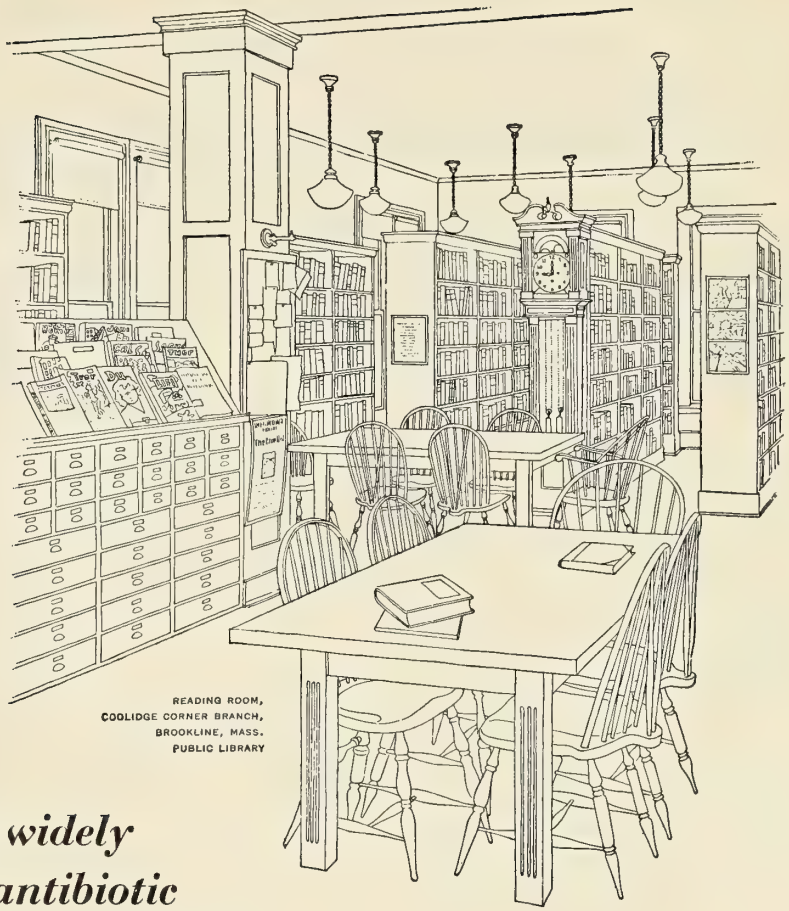
**The Clay-Adams company has a wonderful ADVERTISEMENT FOR AN 'AUTOCLIP APPLIER' which closes operative incisions by the use of metal clips. . . . The description has all of the mystery and suspense of a 'Whodunit' short story. The unanswered question, which leaps to the eye of the non-surgeon, is "How are the clips removed?". . . . Maybe it's a serial advertisement, and next month's issue will give the answer.**

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Speaking of MEDICAL ADVERTISEMENTS, The Birtcher Corporation, maker of electrical high frequency instruments, has a peculiar and reminiscent one in current journals. . . . (It reminds one of the Florida politician who told the natives that his opponent was an extrovert, was secretly a student of semantics, and several other words open to being misconstrued). . . . The Birtcher adv't. shows an attractive, bare-shouldered woman, and the subtitle reads, "She's Been Hyfrecated".



*New aureomycin minimal dosage for adults —four 250 mg. capsules daily, with milk.*



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***a most widely accepted antibiotic in the broad-spectrum field is***

# AUREOMYCIN

*Hydrochloride Crystalline*

***because***

Physicians in the United States and throughout the world have recognized the time-saving value of immediate use of aureomycin in cases of active infection.

The successful use of aureomycin, as described in publications by physicians throughout the world, has increasingly encouraged others to use this antibiotic and publish reports thereon. To date, more than 7,000 original reports, editorials, brief comments, and similar notations have appeared in the published literature.

The trend of the literature clearly indicates that in desperate situations caused by infection, where previously cure would have proved difficult or impossible, aureomycin has saved the day.

*Capsules:* 50 mg.—Vials of 25 and 100. 100 mg.—Vials of 25 and bottles of 100. 250 mg.—Vials of 16 and bottles of 100.
*Ophthalmic Solution*: Vials of 25 mg.; solution prepared by adding 5 cc. distilled water.

LEDERLE LABORATORIES DIVISION AMERICAN Cyanamid COMPANY 30 Rockefeller Plaza, New York 20, N. Y.

# REPORT OF THE EXECUTIVE SECRETARY

## CLINICAL SESSION—AMERICAN MEDICAL ASSOCIATION DENVER, COLORADO

Your Executive Secretary in company with Jesse D. Hamer, M.D., Association Delegate to the AMA, attended the Sixth Annual Clinical Session of the American Medical Association held in Denver, Colorado, December 2-5, 1952, with headquarters at Hotel Shirley-Savoy.

Monday, December 1, 1952, in advance of the Clinical Session, the Fifth Annual Medical Public Relations Conference was held. The theme: "Mutual Understanding—The Key to Better Public Relations." Chairman of the General Session was W. A. Liggett, M.D., President of the Colorado State Medical Society. The address of welcome was delivered by George F. Lull, M.D., Secretary and General Manager of AMA. Edward J. McCormick, M.D., President-Elect of AMA delivered the keynote address: "Medical Public Relations Today." He emphasized: "Mutual understanding can only be based on mutual knowledge and trust. To build such understanding we must tell the positive story of American medicine again and again. We must describe the many projects which we are undertaking to benefit the health of the people. We must ask the help of others in our programs, so that the workers for the cause of better health will be multiplied. We must share our ideas, our hopes and our dreams with the rest of America. Mutual understanding is a two-way street. Mutual understanding is built upon mutual respect."

There must be no let up now that we have a new Administration. Every physician should be brought the message how he can improve his public relations. A two-act play: "Practice-ly Yours" was a presentation in point, staged by the Denver University School of Theater, action taken depicting a typical scene in the doctors' offices and waiting rooms of today, and showed how the receptionist and physician should and should not attend the patient PR-wise. Continuing society discipline of its members where necessary is urged. The fee structure, itemizing bills and proper indoctrination of medical assistants were discussions pointing up the need and suggesting a course to further improve the physician-patient relationship. Keeping up-to-date on and participating in medicine's activities, encouragement and support of hospital and medical prepayment plans, financial assistance to medical schools and support of community projects have contributed much in the past to improve the physicians' public relations and there should be no letup to this end lest the gains of yesterday be lost tomorrow. While in this country today, there are more practicing doctors than elsewhere, physicians to population ratio, many of our societies, it is reported, are providing scholarships to prospective, qualified medical students in an effort to maintain this favorable record. Progress is our achievement to date.

Albert Williams, Sr., of Denver, president of the United States National Bank, addressing the luncheon meeting said: "Fear is at the bottom of all human problems. The greatest thing a doctor can do is to quiet the fears of the people. Health is a national asset, a national security. Doctors have the confidence of both the sick and the well. The community thinks highly of the doctor and expects much from him. We must work together as Americans to protect America. The future of our country is in his hands. With the future of the United States in the hands of such intelligent, God-fearing and hard working people, I'm not afraid."

As member of the Executive Committee of the Medical Society Executives' Conference, I attended a half-day session devoted to the business affairs of the Conference, revision of By-Laws and plans for the annual meeting in New York; likewise, I attended all sessions of the AMA House of Delegates and several of the Reference Committee meetings. Possibly the most controversial subjects presented for discussion were those dealing with the "doctor-draft act extension" and "costly veterans' hospital care, service-connected and non-service connected, including care of dependents". Dr. Hamer will report on the proceedings.

Dr. John Matson Travis of Jacksonville, Texas, received the gold medal and citation symbolic of the honor, having been named GP of the year at the opening session of the House.

A third contribution of $500,000 by the AMA to the American Medical Education Foundation was announced.

Member physicians registered included Jesse D. Hamer, Phoenix; Harry A. Barnes, Flagstaff;

NOT FOR PROFIT

THE HOSPITAL BENEFIT Bulletin

Special Published Bi-Monthly by the Hospital Benefit Association, First Street at Willetta, Phoenix December, 1952

## Question Quiz
### Do you know the answers?

**Q. Does the Hospital Benefit Association cooperate with doctors and hospitals?**

A. Yes. The Association cooperates in every possible way. It actively supports the standards of the medical profession. And payments are made as quickly as possible with a minimum of "paper work" for doctors and hospitals.

**Q. How do hospitals and doctors benefit from the Association?**

A. Both benefit from HBA, because member-patients are financially able to pay hospital and surgical bills when needed—thus enabling hospitals and doctors to provide more effective treatment.

**Q. How many Association members are there today?**

A. More than 35,000.

**Q. May HBA members choose their own hospitals and doctors?**

A. Yes. Member benefits are paid to any licensed hospital or physician (M.D.) anywhere in the world.



**"I'm warning you, Henry, one smart crack like 'What's Cooking?' and you've had it!"**

# *Hospital Benefit Association To Honor Arizona Hospitals In Christmas Day Broadcasts*

## Program of Christmas Carols Will Be Broadcast On Nine-Station Radio Network, 4:00-4:30 P.M.

As a tribute to the fine work being done by the medical profession in Arizona, the Hospital Benefit Association will sponsor a half-hour broadcast on Christmas Day to call the public's attention to the important services being rendered by the state's hospitals and doctors.

The program will be broadcast over a nine-station network from 4 to 4:30 p.m. It will feature a well-known choral group singing favorite Christmas carols. And it will vividly tell about the work being done by doctors, nurses and hospitals who are true "Angels of Mercy"—not only at Christmas-time but throughout the year.




**The directors, officers and staff of the Hospital Benefit Association want to thank all doctors, nurses and every staff member of every Arizona hospital for their splendid cooperation during the past year, and to wish all of you and your families a Merry Christmas and a Happy New Year.**

### Public Relations Program

This is part of the Association's continuing public relations program which has, on every occasion, wholeheartedly supported the standards of the medical profession. The Association has devoted considerable radio and newspaper advertising to combat any form of socialized medicine or compulsory health insurance. It has always supported the recruiting of nurse trainees. And it publishes a bimonthly bulletin for its members featuring health articles by outstanding doctors.

## New A. M. A. Booklet Makes Good Reading

The Hospital Benefit Association would like to compliment the American Medical Association on the splendid booklet, "Winning Ways With Patients", which was published recently and sent to all A.M.A. members.

This booklet contains many important hints which can be of benefit in doctor-patient relationships. If you have not already received your copy, or would like extra copies, write to Lea Brown, Director of Publications, American Medical Association.

*TUNE IN ON ONE OF THESE ARIZONA STATIONS*

| | |
|---|---|
| **Phoenix** | **KTAR** |
| **Tucson** | **KVOA** |
| **Yuma** | **KYUM** |
| **Prescott** | **KYCA** |
| **Globe-Miami** | **KWJB** |
| **Safford** | **KGLU** |
| **Douglas-Bisbee** | **KAWT** |
| **Winslow** | **KVNC** |
| **Flagstaff** | **KCLS** |

George D. Boone, Tucson; Ian M. Chesser, Tucson; Roscoe A. Gutekunst, Phoenix; Dale C. Hathaway, Ray; Elvie B. Jolley, Bisbee; Samuel R. Joseph, Phoenix; Harry S. Beckwith, Winslow; and Juan E. Fonseca, Tucson. Others who may have been in attendance were not yet listed as of the latest release available.

Respectfully submitted,
Robert Carpenter
Executive Secretary

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## ARIZONA PHARMACEUTICAL ASSOCIATION, INC.

The officers and members of the Arizona Pharmaceutical Association want to thank you for the opportunity of having this little chat with you every month. There are many problems, in this day of multitudinous laws and regulations, of mutual interest to all who are engaged, in any manner, in the health and welfare of the public. Every year we are faced with new interpretations of present laws and with new legislation and court decisions.

One of our most stringent regulatory measures is the Harrison Narcotic Law, as amended. This law, together with the addition of the new amendments to the Arizona Narcotic Act, passed by the legislature this past year, provides more teeth for enforcement of their respective provisions.

I am particularly anxious to bring you some information relative to the enforcement of these laws. As you may now, the enforcement of the Arizona law relating to the sale of narcotic drugs has been invested in the Arizona State Board of Health, together with all other peace officers and all county attorneys.

At the 1952 session of our legislature, a new liquor control act was passed. Section 72-103b, subsection 9 of this act reads, in part, as follows:

> "it shall be the duty of the Superintendant of Liquor Licenses and Control to assist in the enforcement of the provisions of law relating to the possession and sale of narcotic drugs".

In conformity with this new provision, the Superintendant setup a narcotic squad within the department of Liquor Licenses and Control. These men have been working closely with the federal narcotic agents and, the latter part of November, began working with the pharmacies of our state. They are especially interested in the acceptance of prescriptions for narcotics over the telephone. Article 172 of the Federal Act states:

> "the furnishing of narcotics pursuant to telephone advice of practitioners is prohibited, whether prescriptions covering such orders are subsequently received or not".

Under this article the prescription must be in the hands of the pharmacist prior to the delivery of the medicine. Mailing narcotic prescriptions by a physician, after delivery is made by the druggist, is not allowed. You, doctor, may have been inconvenienced by a request from your pharmacist for the prescription before he can deliver the medicine. It is our hope that you will bear with us, in this particular. Every pharmacist is being warned, by the officials, not to fill prescriptions pursuant to telephoned orders. Failure to comply will make them subject to prosecution and, if convicted, will cause them to lose their license to practice their profession.

In order to facilitate this program, if you do phone a prescription to your pharmacist, will you leave the original with your office nurse, or if you are on a house call, with the patient, so the pharmacist's delivery boy may pick it up without undue delay?

We shall do everything within our power to expedite your prescriptions and shall endeavor to prevent any uncalled for delay. The practice of our profession is of paramount interest to all of us but this is one time when we are faced with a somewhat untenable situation. We shall need your cooperation. Thanks loads.

———o———

## PAN-PACIFIC SURGICAL ASSOCIATION

The executive office of the Pan-Pacific Surgical Association announces that the Sixth Pan-Pacific Surgical Congress will be held in Honolulu in November 1954.

Included in the scientific program will be sessions in all divisions of surgery and related fields, with papers presented by topflight surgeons from the Pacific Area countries.

For further information concerning the Sixth Congress or membership in the Association, doctors may write to the Pan-Pacific Surgical Association, Suite 7, Young Building, Honolulu, Hawaii.

# GLENDALE CLINIC



Front View of Glendale Clinic



Emergency Room



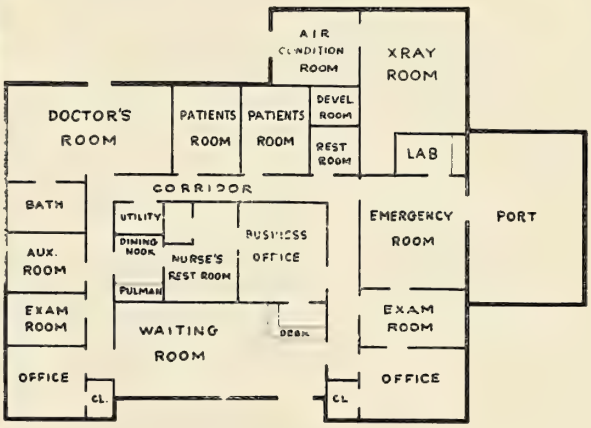
X-Ray Room



Dr. Fulk and two of his assistants



Reception Room




Floor Plans

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PHYSICIAN and SURGEON
Telephone YEllowstone 7-7240 (Phoenix) Lateral 16 and Glendale Ave. Glendale, Arizona

## PHYSICIANS AND SELECTIVE SERVICE

This brief article has been compiled to convey as much information as is presently available on the relationship of physicians, dentists, and veterinarians to the Selective Service system. On points not made entirely clear it is suggested that inquiry be made at the Arizona State Headquarters of Selective Service, Phoenix, which is headed by Gen. A. M. Tuthill, or consult his local board or his state advisory committee.

*Subject to Call*

All physicians up to and including the age of fifty are eligible for service under Special Registration, but the younger doctors are generally inducted first.

*Double Liability*

A registrant is said to be "doubly liable" for service when he (1) was born after August 30, 1922, and under the Universal Military Training and Service Act of 1951 as amended, is eligible for service like any other male born after that date, and (2) is eligible for service because he is a physician, dentist or veterinarian and registered as a Special Registrant under Public Law 779.

Most of the younger professional men fall into the double liability group and have received temporary deferments as regular registrants to complete their schooling and one year internship. Upon completion of the one year internship, a local board, in most cases, automatically reclassifies a registrant into the classification for which he qualifies. If he has received a deferment as a student or intern, his liability as a regular registrant is extended to age 35. If he qualifies for and receives a 1-A classification he can be ordered for induction as a private by his local board.

By a thorough understanding of the laws and regulations in these matters the young professional man may be able to make plans well in advance of the time they may be required to enter military service, and have sufficient time to accept commissions in the branch of service they prefer, thus eliminating the possibility of their being inducted as enlisted men.

Any physician classified 1-A by a local board may appeal his classification within ten days after receipt of the 1-A, by sending a letter direct to his local board. In the letter of appeal it must state "I hereby appeal my classification", with reasons set forth for the appeal.

*Essentiality*

Local boards having jurisdiction over recent medical school graduates who are liable for service as regular registrants (recruits) should be advised of the names of the hospitals in which these graduates are interning, and that they are essential to these hospitals in order to maintain the minimum house staff requirements—which is a direct contribution to the maintenance of the National health, safety, or interest. This is to insure these men from being inducted into service before completion of their one year internship.

In declaring anyone not available for military service because of teaching or research work it is necessary that they have been engaged in this work for from four to five years on a full-time basis. This does not include the training necessary to enter this work. When a man is declared essential to a medical school or hospital for research or teaching it is necessary that the university or hospital try to seek a replacement.

The criterion for essentiality rating—the physician must have been in the community four years in full time practice, in a community with limited medical facilities, and his entry into active military duty with the Armed Forces would make the health standards of the community fall below minimum requirements. The total population of the community concerned, and the surrounding community in which the physician practices, should be considered, along with hospital facilities available. Consideration must also be given as to how many other physicians are within a reasonable travel distance, and how far it is to another town with adequate medical facilities, taking into consideration the number of physicians available to any particular group.

A physician declared not available for service because of reasons of essentiality to a community, must try to seek a replacement for himself in that community.

*Induction*

A man ordered for induction as a Special Registrant may apply for and accept a commission, so he will not be inducted as a private. It takes a minimum of ninety days for Navy and Air Force commissions to be processed and for the men to be appointed. The Army can, in

extreme cases, process a case within three weeks.

When a registrant who is also a Special Registrant is being inducted as a regular registrant, he will have the same opportunity to secure a commission as a Special Registrant, and the local board should so advise him.

A special Registrant who is ordered for induction as a Special Registrant, and who accepts a commission, will not report for induction. When ordered to report for induction as a regular registrant he will be inducted unless he accepts a commission and actually enters on active duty by the date set for the induction.

——O——

## U. S. HOUSE OF RPRESENTATIVES

At least 5 M.D.'s in the House of Representatives are assured at this writing. Re-elected were: Minnesota—Dr. Walter H. Judd (R); Nebraska—Dr. A. L. Miller (R); Pennsylvania—Drs. I. D. Fenton (R) and T. E. Morgan (D). For a first term is Dr. Will W. Neal (R) of West Virginia. In Idaho a very close contest which may result in a recount discloses Dr. John T. Wood (R) seeking re-election trailing his Democratic opponent.


*In very special cases*
*A very superior Brandy*




*Specify* 84 Proof

★ ★ ★

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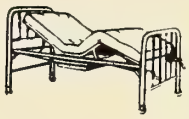
milk and milk products.

We are aware of the importance of good milk to good health and of our obligation to supply a product which will merit your confidence.

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## MAN BEHIND THE TEST

The ancient Hebrews decreed that a warning blast should be sounded on the *shofar* to mark the third case of an infectious disease in a community, but diphtheria rated a *shofar* warning for the very first case. Few diseases have been so dreaded as diphtheria, partly because it is especially deadly for children in the tender two-to-five age bracket. Last week Yeshiva University in New York City held a special convocation to give an honorary degree to a physician who had done much to take the dread out of diphtheria: Bela Schick, the little-known man behind the famous Schick test.

When Bela Schick was still a boy in Hungary, German researchers tracked down the microbe which causes diphtheria, and isolated the poisonous secretion which makes a strange, strangling membrane grow across many a victim's throat. They got as far as developing a horse serum which could be used either as a preventive against the disease or as a remedy after it had struck. But so many people got sick from the serum itself that doctors hated to give it as a preventive unless they could be sure that it was really necessary. They needed a test to show whether a patient had acquired immunity to diphtheria.

As a young doctor in Vienna, Schick worked with Clemens von Pirquet on serum sickness and similar sensitivities. The two coined the word "allergy." Von Pirquet hit upon the tuberculin test, which shows whether the subject has (or has ever had) tuberculosis, and Schick thought the same idea might be applied to other diseases. What he got was slightly different but more valuable: a remarkably accurate and fairly simple test which shows whether a subject is vulnerable to diphtheria.

Schick announced the test in 1913. Within ten years, a new and far safer immunizing substance (toxoid) took most of the risk out of preventive measures. Nowadays, throughout most of the U.S. and in many another country, babies get their first protective shot by the time they are a year old. Years after the first shot, the Schick test (two injections, one in each arm) shows whether the immunity has lasted or needs renewing. And it will show at any time whether a preventive shot has "taken."

Although the Schick test was intended mainly for children, its usefulness extends to their elders. For adults are more likely than youngsters to have allergic reactions to immunization shots, so it is especially important in their case to give no unnecessary innoculations. Sensitive grown-ups often can be immunized by tiny, repeated doses of toxoid.

Slight, gentle Pediatrician Schick, 75, childless himself, has treated tens of thousands of children in Vienna and (since 1923) in New York City, stil commutes by subway from his Manhattan home for office hours in Brooklyn. More than the medals he has received he treasures a thank-you book signed in 1933 by a million New York City school children. Yeshiva's new million-dollar department of pediatrics is to be named for Dr. Schick. His most enduring monument: the test which helps to save lives.

*Reprinted from TIME, December 8, 1952.

———O———

## LEST WE FORGET!!

About to go into the RED despite a continuing post-war boom is Britain's cradle-to-grave social security program.

Collections from 23 million adult Britons plus planned government contributions from tax funds have exceeded benefit payments thus far. A reserve of about 3 billion dollars has accumulated. However, hundreds of thousands of men and women are becoming eligible for retirement pensions and the payments are about to multiply rapidly. For a weekly payment of 70 cents, plus another 60 cents collected from his employer, the Briton has been promised complete protection against poverty from before birth until after he is laid in his grave. He *and* his employer are now asked to chip in another 10 cents a piece.

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# FIRST ANNUAL MEETING

# ARIZONA ACADEMY

## — of —

# GENERAL PRACTICE

## SAFFORD, ARIZONA

## JANUARY 24 and 25, 1953

## *Program*

### SATURDAY, JANUARY 24, 1953

8:00 A.M. ..... Breakfast - Safford Inn
State Officers and Directors 1952-53
Morning Moderator ..... F. W. Knight
Safford, Arizona

9:00 A.M. ..... William Moretz
Professor of Surgery,
University of Utah College of Medicine
*"The Management of Injuries of the Hand"*

10:00 A.M. ..... John F. Waldo
Professor of Medicine
University of Utah College of Medicine
*"The Differential Diagnosis and Management of Respiratory Infections."*

11:00 A.M. ..... Emil Holmstrom
Professor of Obstetrics
University of Utah College of Medicine
*"The Management of Functional Bleeding"*

NOON-2:00 P.M. .. Luncheon-Business Meeting
Election of Officers, Etc.
Safford Inn

Afternoon Moderator .. Calvin Williamson—Yuma

2:00 P.M. ..... Morton H. Leonard, A. B. O. S.
El Paso, Texas
*"Treatment of Severe Sprains of the Ankle"*

3:00 P.M. ..... William Moretz
*"Recent Advances In Abdominal Surgery"*

4:00 P.M. ..... John F. Waldo
*"The Diagnosis and Management of the Acute Phase of Poliomyelitis"*

7:00 P.M. ..... Cocktail - Dinner - Party
Safford Inn

### SUNDAY, JANUARY 25, 1953

Morning Moderator ..... Lucille M. Dagres
Phoenix

9:00 A.M. ..... Emil Holmstrom
*"The Management of R H Problems"*

11:00 A.M. ..... John F. Waldo
*"The Modern Uses of the Anti-Biotics"*

11:00 A.M. ..... William Moretz
*"Recent Advances in Vascular Surgery"*

Noon
to
2:00 P.M. ..... Luncheon - Safford Inn
*Question and Answer Type*

ADJOURNMENT

Saturday Luncheon for Wives: Arranged

That while the meeting is fundamentally for members of the Arizona Academy of General Practice all general practitioners in the State are cordially invited to attend and if they do so, will they please contact: Donald E. Nelson, M. D., Safford, Arizona, stating their intentions.

## SEMINAR OF THE AMERICAN CANCER SOCIETY IN ARIZONA

The American Cancer Society-Arizona Division, in collaboration with the Arizona Medical Association, will hold the first Cancer Seminar of its kind in the Southwest, in Phoenix on January 15, 16 and 17, 1953. It is hoped that this type of seminar will become an annual affair. Dr. Edward Bregman, Chairman of the Arizona Division of the American Cancer Society, recently attended the National Convention and brought back the plans for this regional seminar. This coming meeting is the fruition of these plans.

The three day meeting will include lectures by eminent men in the field of cancer from all parts of the country. These specialists are Drs. Dudley Jackson, D. A. Todd, Lewis W. Guiss, L. H. Garland, Wm. S. McComb, David A. Wood, Edward Banner, U. V. Portmann, and John C. Jones. The subjects covered will include among others cancer of the skin, generative organs, stomach, lung and oral cavities.

Dr. Thomas Bate, President of the Arizona Medical Association, will open the convention at noon, Thursday, January 15, 1953, at the Paradise Inn Resort near Phoenix. Each meeting will have as a moderator eminent medical men of Phoenix and Tucson with discussion from the floor and a question period after each subject. Round table lunches will help generate a closer group discussion each day. There will be a banquet on Friday Night, January 16, 1953.

The detailed program with the names of the speakers, their subjects, the names of the moderators and other pertinent data will be mailed to every member of the Arizona State Medical Society as well as to members of the State Societies of the Rocky Mountain area, a total of 4500-5000 invitations being extended. Arrangements are being made to find accommodations for all visiting medical men and their wives either at the Paradise Inn or other closeby resorts, to provide transportation to the meetings, if necessary, etc.

It is hoped that there will be an excellent turnout of local doctors, thus assuring a continuation of these seminars on an annual basis.

## CANCER SEMINAR
## AMERICAN CANCER SOCIETY
### Arizona Division

In Association
With
ARIZONA MEDICAL ASSOCIATION

### PROGRAM

JANUARY 15 - 16 - 17, 1953
Phoenix, Arizona
All sessions of the Seminar will be held
in the Convention Hall of Paradise Inn

### THURSDAY, JANUARY 15, 1953

9:00-12:00 A.M. Registration

1:30 P.M. Opening of Seminar
- Edward H. Bregman, M.D., Chairman, Board of Trustees, Arizona Division, A.C.S.
- Thomas H. Bate, M.D., President, Arizona Medical Association

Introduction to the Seminar
- Charles S. Cameron, M. D. Medical and Scientific Director, American Cancer Society, New York

2:00 P.M. Cancer of the Breast

Moderator:
- Arthur J. Present, M.D. Radiologist, Tucson

Speakers:
- Dudley Jackson, M.D. Director of Nix Tumor Clinic Assoc. Professor of Surgery Baylor University, San Antonio, Texas
- D. A. Todd, M.D. Pathologist, Nix Tumor Clinic San Antonio, Texas

3:30 P.M. Cancer of the Colon

Moderator:
- Royal W. Rudolph, M.D. Surgeon, Tucson

Speakers:
- Lewis W. Guiss, M.D. Asst. Professor of Surgery, School of Medicine, U.S.C. Los Angeles, California
- L. H. Garland, M.D. Professor of Radiology, Standard Univ. Medical School San Francisco, California

## FRIDAY, JANUARY 16, 1953

10:00 A.M. Cancer of the Skin

Moderator:
J. Madison Greer, M.D.
Surgeon, Phoenix

Speakers:
William S. McComb, M.D.
Assoc. Surgeon, Chief,
Head and Neck Service
M.D. Anderson Hospital,
Houston, Texas
David A. Wood, M.D.
Professor of Oncology,
University of California
School of Medicine,
San Francisco, Calif.

11:30 A.M. Cancer of the Stomach

Moderator:
Henry G. Williams, M.D.
Surgeon,
Grunow Clinic, Phoenix

Speakers:
Lewis W. Guiss, M.D.
L. H. Garland, M.D.

12:30 P.M. Round Table Discussion—Luncheon

2:00 P.M. Cancer of the Ovary

Moderator:
Karl S. Harris, M.D.
Surgeon, Phoenix

Speakers:
Edward A. Banner, M.D.
Mayo Clinic,
Rochester, Minn.
U. V. Portmann, M.D.
Director of Radiation Therapy
Cleveland Clinics,
Cleveland, Ohio

3:30 P.M. Hospital Pathologist & Radiologist In Cancer Problems

Moderator:
Norman A. Ross, M.D.
Surgeon, Phoenix

Speakers:
L. H. Garland, M.D.
David A. Wood, M.D.

## SATURDAY, JANUARY 17, 1953

10:00 A.M. Cancer of the Oral Cavity and Pharynx

Moderator:
Thomas A. Hartgraves, M.D.
Director of Laboratories
Grunow Clinic, Phoenix

Speaker:
William S. McComb, M.D.

11:00 A.M. Cancer of the Lung

Moderator:
D. W. Melick, M.D.
Surgeon, Phoenix

Speakers:
John C. Jones, M.D.
Thoracic Surgeon
Los Angeles, California
David A. Wood, M.D.

12:30 P.M. Round Table Discussion—Luncheon

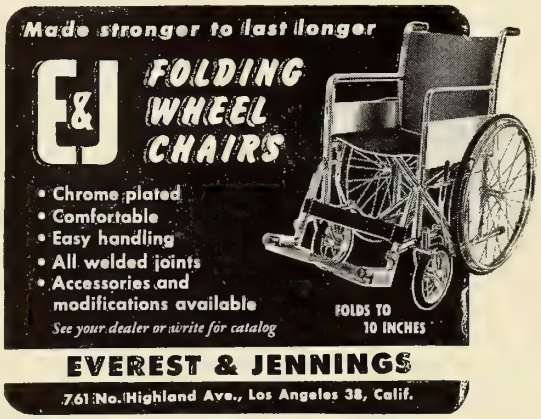
2:00 P.M. Cancer of the Uterine Cervix

Moderator:
Preston T. Brown, M.D.
Gynecologist, Phoenix

Speakers:
Edward A. Banner, M.D.
U. V. Portmann, M.D.

3:30 P.M. A Research Project for Arizona

Speaker:
Charles S. Cameron, M.D.




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# Woman's AUXILIARY

## OUTLINE OF THE NURSES' LOAN PROJECT

I. The Nurses' Loan Fund was established in 1950.

II. The fund was about $600.00.
   a. The money was derived from:
      Contributions from members at large.
      One dollar per member from four county auxiliaries.
      Sixty dollars from interested members in Phoenix and other board members.
   b. In 1951 Maricopa County Auxiliary gave $300.00 to the fund because of its keen interest in the project.
   c. The Woman's Auxiliary to the Arizona Medical Association has most generously augmented the fund each year in order to help insure the success of the project and to help more applicants. Each member of the State and County Auxiliaries will have paid $5.00 toward the fund over a five year period. All members at large who have not contributed are urged to do so. Send your checks to the State Treasurer, Mrs. R. Lee Foster, 2215 North 11th Avenue, Phoenix, Arizona.
   d. In the three years since its appointment, the Committee has loaned $2450.00 to eleven young women to go through nurses training.

III. Requirements:
   a. B average in high school.
   b. Good moral character.
      Three references are required.
   c. Must show proof of needing financial assistance.
   d. Must pass a strict physical examination.
   e. Must be accepted by one of the four accredited schools of nursing in Arizona. These hospitals are:
      Good Samaritan, Phoenix, Arizona
      St. Joseph's Hospital, Phoenix, Arizona
      Memorial Hospital, Phoenix, Arizona
      St. Mary's Hospital, Tucson, Arizona
   f. Must have a personal interview with a member of the committee.

IV. Repayment of the Loan.
   a. The Loan requested must not exceed $300.00, is interest free. Repayment of the loan must start six months after the girl receives her state license to work at the rate of not less than $12.50 a month.
   b. If the girl does not finish her training she must start repayment within 30 days after leaving school. She must repay the loan at not less than $12.50 a month.
   c. Applications who receive the loans are required to sign contracts with the Auxiliary. A parent, or guardian, is also required to co-sign with the girl to repay the loan.

V. Where the girls who have received loans are now.
   a. Only one girl has graduated since the fund was established. She is living in Pennsylvania and has repaid $60.00 of the $100.00 loan.
   b. St. Mary's Hospital in Tucson
      One senior.
      One freshman in the September Class of 1952.
   c. Good Samaritan Hospital, Phoenix.
      One girl who is a senior and who has a brilliant record.
      Two freshmen students, September class of 1952.
   d. St. Joseph's Hospital, Phoenix.
      One senior girl.
      Three young women in their second year.
      One freshman girl who entered in September class of 1952.
   e. Families of the girls who have received loans live in Kingman, Morenci, Clifton, Globe, Tucson, Prescott, and Phoenix.

VI. How Committee gets applicants.
   a. Each January a letter is sent to all high school principals in Arizona telling of the availability of the loan and listing the qualifications. Two duplicate letters are enclosed, one for the school

nurse or vocational director and one for the bulletin board.

b. Last year an appeal was made through Arizona Medicine to all doctor's wives to help inform their communities of the project.

c. Last year most county auxiliaries had a Nurse Recruitment Week to inform the public of the great need for more trained nurses, and to interest high school girls in going through nurses' training. With the cooperation of the hospitals who arranged lectures, tours, and even luncheons for these girls the project was most successful. Tucson had a large tea to start its program. This was an excellent way to publicize the Nurses' Loan Project, and showed results.

Mrs. Carlos C. Craig,
Nurses' Loan Chairman
Phoenix, Arizona.

———O———

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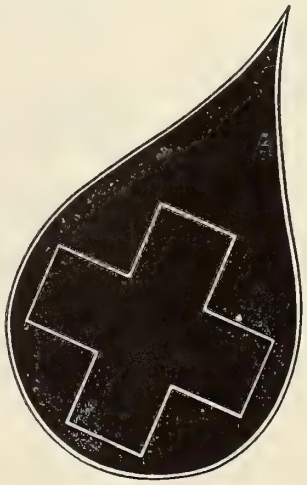
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